全国职业教育“十二五”规划教材
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Accounting English

主　编　苏海花　王静芝
副主编　杨亮辉　李恩慧　刘　燕　伍　宁
参　编　卢　镂　周莉华
　　　　杨继新　陈凌子

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内 容 简 介

本书以现代高职教育项目任务驱动理论为指导，按先深化理性认识再到实际运用的次序编排章节内容。全书共8章：会计概述；会计循环；资产；负债；所有者权益；收入、费用与利润；财务报表；财务报表分析。每章均包括课前任务、导入、正文、专业术语、练习五个部分，符合学习者的认知习惯。

本书可作为高职高专会计、财经、管理专业作为专业英语教材，也可供广大会计从业人员以及其他希望提高涉外会计英语能力的学习者使用。

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前　言

自人类进入信息社会以来，全球经济社会一体化趋势日益加深，中外企业接触日趋频繁。作为企业管理的重要工具，中外会计市场势必越来越开放。一方面，国外企业、会计公司涌入我国内地，需要吸纳大量本土化会计人才；另一方面，国内公司、企业走出国门，需要聘用懂外语、熟悉国际会计与商业沟通的复合型涉外会计人才。为了满足人才市场这一现实需求，高职高专会计、财经、管理类专业均开始开设会计英语课程，本书为适应这一形势而编写。

为适应高职高专的基本学情，本书内容力求浅显易懂，理论知识以必需、够用为度，内容编排突出可操作性，方便教学与实训。本书的特点是：文章简洁易懂，符合国际会计惯例，案例贴切丰富，讲解层层深入。本书便于会计、财经、管理类专业学生和会计工作者使用英语处理各种会计事务，不仅能培养学生英语语言能力，还能培养学生采用英语处理日常会计业务、编制财务会计报表以及进行报表分析的实际操作能力，是一本实务操作性较强的教材。

本书由长沙民政职业技术学院苏海花、湖南工业职业技术学院王静芝任主编，由长沙民政职业技术学院杨亮辉、李恩慧，娄底职业技术学院刘燕和中国工商银行湖南省分行伍宁任副主编。长沙民政职业技术学院卢镂、周莉华、杨继新、陈凌子老师参与编写。这些老师都有着非常丰富的相关课程的教学经验和丰硕的科研成果，其中三位还具备国外知名大学硕士学历，从而保证了本书的编写质量。另外，外籍教师（英国）Harriet Giles 承担本书语言、语法校对工作，在此一并表示感谢。

在编写过程中，我们参考了很多国内外学者的相关研究成果和资料，未能一一注明，特此表示衷心的感谢。

由于编者水平有限，加上时间仓促，不当之处在所难免。恳请同行专家和广大读者提出宝贵意见，以便今后进一步修订、完善。

编　者

2015 年 9 月

Contents

Chapter 1

General Introduction to Accounting

Learning Objectives:

By the end of this chapter, the learners are supposed to:

- gain some knowledge about accounting assumptions and accounting principles
- have a good command of accounting elements and accounting equation
- adhere to ethics in accounting practice
- be familiar with the terms and useful expressions in this chapter

Pre-class Task

John Cruse invested $50,000 in cash to open a dental clinic. He hired three employees. On the first day, the clinic purchased $15,000 dental equipment from the supplier on credit. This equipment provided teeth bleach service for a customer and received $500 in cash.


Could you point out the accounting elements involved in the above information?

Which belong to assets? Which belong to liabilities? Which belong to owner's equity?

Introductory Remarks

Accounting is often described as an information system of classifying, recording, measuring, summarizing, interpreting and reporting the economic activities with monetary unit as its main criterion. It is often regarded as "the language of business".

One of the most important functions of accounting is to accumulate and report financial information to its interested users including managers, stockholders, banks and other creditors, government agencies, investment advisors and general public.

Another important function of accounting system is to supply useful information for those making economic decisions, which involves planning, control and evaluation. Accounting "links" decision makers with economic activities and with the results of their decisions. It also serves other purposes: to produce operating documents, to protect the company's assets, to provide data for a company tax returns, and even provide the basis for reimbursement of costs by clients or customers.

There are several types of accounting in practice. The most common are financial accounting and management accounting. But with the growth of organizations, changes in technology, government regulation and the globalization of economy during the twentieth century, other types of accounting have sprung up such as cost accounting, budgetary accounting, tax accounting, social accounting, environment accounting, not-for-profit accounting, international accounting, etc.

Section 1　Accounting Assumptions and Accounting Principles

In order to guide accountants to make financial statements which are more reliable, understandable and comparable, we need a well-defined body of accounting assumptions and

principles. Financial accounting depends on certain standards or guides which have been proved useful in recording and reporting economic data. These standards are called Generally Accepted Accounting Principles(GAAP), which include principles as to how accountants should treat the relevant financial data and conventions as to how they should deal with specific issues that may arise.

1.1.1 Accounting Assumptions

Accounting has established group of assumptions, which are the basis of financial accounting. There are four fundamental accounting assumptions in the course of recording business transactions:

- **Economic Entity Assumption**

In this assumption, the activities of an entity are kept separate and distinct from the activities of its owner and all other economic entities. This assumption helps clearly distinguish those assets that belong to the company and those that belong to individuals. In other words, a company is a "fictional" being, the business and the owner of the business are two separate legal and economic entities. Each entity should account and report its own financial activities.

- **Going-concern Assumption**

In this assumption, the company is assumed to continue in operation long enough as a going-concern, that is, it expects to continue operating indefinitely and expects to realize its assets at the recorded amounts and to pay off its liabilities in the normal course of business.

This assumption enables accountants to make estimates on asset lives and how transactions will be amortized over time. It will affect depreciation figures and the way in which the accountant values income and expenses that have been accrued but not yet realized, such as when a company has sold goods but not yet received payment.

- **Monetary Unit Assumption**

In this assumption, only transaction data expressed in money can be included in the accounting records and the unit of measure remains relatively stable over time in terms of purchasing power. All financial transactions are in a single monetary unit or currency. Financial statements must be reported in the national monetary unit (i.e., U.S. dollars for U.S. companies). Take a Chinese company for example, if its subsidiary is in the USA, the financial data should be calculated in $ in the US. When it reports its financial statements to its parent company, it has to change its results into RMB ¥.

As a matter of fact, this assumption excludes the effects of inflation or deflation on the economy in which the company operates.

● **Periodicity Assumption**

The environment where accounting operates requires that economic activities of a business should be divided into relatively short periods, for example, financial statements are prepared monthly, quarterly or yearly. The most common accounting period is the fiscal year, the fiscal year may coincide with the calendar year but does not have to.

The accounting period assumption is needed to allow a company's financial health to be tracked over time in a way that allows fair comparisons.

1.1.2 Accounting Principles

The basic principles followed by accountants in recording business transactions can be mainly divided into 6 categories, and they are basically related to how assets, liabilities, owner's equity, revenues, expenses and profit are recognized, measured and reported.

● **Historical Cost Principle**

This principle requires us to record most of our assets and liabilities on the basis of acquisition price or original costs with no adjustments for increases in market value. It is regarded as the easiest measurement method without the need for constant appraisal and revaluation.

● **Revenue Recognition Principle**

The principle describes that expenses should be recognized in the same period as that the related revenues are recognized. Revenue is measured as the market value of the resources received or the product or service given. It is the basis for accrual accounting, which requires us to record revenue when the goods have been sold or the service has been provided.

● **Matching Principle**

One of the main objectives of accounting is to determine the periodic income by matching proper costs against revenues. The matching principle states that when you are recognizing revenue, you should match related expenses with the revenue. It is a sort of "check" for accountants to be sure that the books they are balancing or the accounts they are managing are accurate.

● **Disclosure Principle**

This accounting principle requires us to report all related financial information about our business in an understandable form. This information is presented in the main body of our financial statements, in the footnotes of our financial statements, or as supplementary information.

● **Objectivity Principle**

The objectivity principle requires financial data are expected to be objective and verifiable. In other words, accountants, accounting systems and accounting reports should rely on subjectivity as little as possible. An accountant should always use objective data (even if it's bad) rather than subjective data (even if the subjective data is arguably better). Only in this way can users rely on its accuracy while making investment and credit decisions.

● **Consistency Principle**

According to the consistency principle, although businesses can choose among different policies, they have to be consistent, which means using the same methods from one accounting period to the next, unless there is a good reason to change a policy, and accounting information of enterprises must be comparable and convenient to be analyzed. Any accounting activities against the consistency principle should be fully disclosed in the financial statements.

Section 2 Accounting Elements and Accounting Equation

1.2.1 Accounting Elements

Accounting elements consist of assets, liabilities, owner's equity, revenues, expenses and profit. These elements make up the basis for financial reports such as balance sheets, ledgers, and other means which accountants use to maintain financial records for businesses, corporations and individuals.

● **Assets**

Assets are economic resources owned or controlled by a specific entity as a result of past transactions or events and must be able to bring economic benefits. Assets can be classified into current assets and non-current assets. Current assets can be converted into cash or consumed within one year or one operating cycle such as cash, bank deposits, office supplies and accounts receivable, while non-current assets can not.

● **Liabilities**

Liabilities are debts of a business arising from past transactions or events. Liabilities will lead to future decrease of economic benefits and can be paid off by transferring assets, providing services, or borrowing new liabilities. Liabilities are usually divided into current liabilities and long-term liabilities. Current liabilities are those amounts which are repayable within a period of less than 12 months or within an accounting cycle such as accounts payable, tax payable, etc., while long-term

liabilities are debts payable over a long period such as bonds payable and long-term payable.

● **Owner’s Equity**

Owner’s equity, also known as the net assets of a business, refers to the economic benefit of owners in the assets of the enterprise, it is equal to assets minus liabilities. Owner’s equity depends on the results of the operations of a business. If a business is profitable, owner’s equity is increased, on the contrary, if a business is not profitable, owner’s equity will be decreased.

● **Revenues**

Revenues refer to the gross inflows of economic benefits resulting from selling goods, providing services, transferring assets or other everyday activities. Revenues may cause the increase in assets, decrease in liabilities, or both.

● **Expenses**

Expenses are the decrease in owner’s equity of economic benefits arising from the course of ordinary business activities. They are the cost of doing business and are the opposite of revenues. Expenses can be divided into cost of production and period expenses. In amount, the expenses equal the value of goods or services used up in gaining revenues. The more the expenses, the more the owner’s equity is decreased.

● **Profit**

Profit which is often called net income is the operating result of an enterprise over a specific accounting period, it is the balance of all revenues after deducting the related expenses. It reflects the business’ accomplishments in its efforts to operate during a certain period. By Chinese accounting standards, profit is classified into “income from main operations” and “income from other operations”, but in international accounting it is not classified like this. If revenues exceed expenses, the result is called net income or profit, if expenses exceed revenues, the difference is called net loss. Revenue is a “gross” concept, while profit is a “net”concept.

1.2.2 Accounting Equation

The relationship between the assets, liabilities, and owner’s equity of a business can be illustrated in a simple mathematical formula known as the accounting equation:

Assets = Liabilities + Owner’s Equity

● **Expanding the Accounting Equation**

Profit is the balance of all revenues after deducting the related expenses. Therefore, the

quantitative relation among the revenues, expenses, and profit can be expressed as follows:

Profit = Revenues − Expenses

The balance of profit distribution after tax is accumulated in retained earnings account, and the retained earnings account belongs to owner's equity item. So, the two equation above can be consolidated as below:

Assets = Liabilities + Owner's Equity + (Revenues − Expenses)

Or: Assets = Liabilities + Owner's Equity + Profit

Revenues, expenses, and profit are temporary accounts, so they will be closed at the end of the accounting period. In the accounting equation, they belong to owner's equity. The equation above will be restored as basic accounting equation:

Assets = Liabilities + Owner's Equity

● **The Effects of Economic Transaction on the Accounting Equation**

The basic accounting equation, also called the balance sheet equation, is the foundation for the double-entry bookkeeping system. For each transaction, the total debits equal the total credits. In a corporation, capital represents the stockholder's equity. Since every business transaction affects at least two of a company's accounts, the accounting equation will always be "in balance", meaning the left side should always equal the right side. Thus, the accounting formula essentially shows that what the firm owns (its assets) is purchased by either what it owes (its liabilities) or by what its owners invest (its shareholder's equity or capital). Every time a transaction occurs, the elements of the equation change, but the basic equality remains.

Example

Transaction 1: *Suppose a company owns assets of $28,000, borrows $15,000 from a creditor, and invests by the owner $13,000, thus the entry made in the accounting equation should be:*

Assets	=	*Liabilities*	+	*Owner's Equity*
$28,000	=	*$15,000*	+	*$13,000*

Transaction 2: *If the company paid $500 bank deposit to purchase a computer. The entry made in the accounting equation should be:*

Assets	=	*Liabilities*	+	*Owner's Equity*
$28,000	=	*$15,000*	+	*$13,000*
+*$500* −*$500*				
$28,000	=	*$15,000*	+	*$13,000*

Transaction 3: *Suppose the company purchased $300 office supplies on credit. The entry*

made in the accounting equation should be:

Assets	=	Liabilities	+	Owner's Equity
$28,000	=	$15,000	+	$13,000
+$300		+$300		
$28,300	=	$15,300	+	$13,000

Transaction 4: *The company paid $800 for telephone fees.*

Assets	=	Liabilities	+	Owner's Equity
$28,300	=	$15,300	+	$13,000
−$800				−$800
$27,500	=	$15,300	+	$12,200

Transaction 5: *The company received $4,000 for providing professional services.*

Assets	=	Liabilities	+	Owner's Equity
$27,500	=	$15,300	+	$12,200
+$4,000				+$4,000
$31,500	=	$15,300	+	$16,200

Total Assets	=	Total Liabilities	+	Total Owner's Equity
$31,500	=	$15,300	+	$16,200

Section 3 Ethics in Accounting

Integrity and objectivity are two key elements of ethical behavior for a professional accountant. Integrity means being honest and forthright in dealing and communicating with others. Objectivity means impartiality and freedom from any conflict of interest. Other elements of ethical behavior include independence, competence and acceptance of an obligation to serve the best interests of the employer, the client and public.

Focuses on enforcing accounting laws vary from country to country. In Germany, accounting legislation is governed by “tax law”; in Sweden, by “accounting law”; and in the United Kingdom, by the “company law”. In addition, countries have their own organizations which regulate accounting. For example, the United States has its Financial Accounting Standards Board (FASB).

Knowledge of ethics can help accountants and auditors to overcome ethical dilemmas, allowing for the right choice that, although it may not benefit the company, will benefit the public who relies on the accountant/auditor's reporting.

Special Terms and Useful Expressions

criterion 标准	acquisition price 购置价格
stockholder 股东	revenue recognition principle 收入实现原则
advisor 顾问	accrual accounting 权责发生制会计
creditor 债权人，债主；[会] 贷方	disclosure 揭露，披露
evaluation 评价，评估	objectivity 客观性
reimbursement 报销，补偿	verifiable 能证实的
globalization 全球化	consistency 一致性
spring up 涌现	owner’s equity 所有者权益
budgetary accounting 预算会计	ledger 分类账，账簿
convention 会议，惯例，规矩	current assets 流动资产
transaction 交易	fixed assets 固定资产
economic entity assumption 经济实体假设	intangible assets 无形资产
fictional 虚构的	note payable 应付票据
distinguish 区分	formula 公式
individual 个人	equation 方程式，等式
distinction 区别	ethic 伦理，（复数）行为准则
going-concern assumption 持续经营假设	attach importance to 重视
indefinitely 无限期地	integrity 完整性
liability 负债	impartiality 公平，公正，不偏袒
amortize 分期偿还（债务）	competence 胜任，能力
depreciation 折旧	legislation 立法
accrue 增加，获得，（利息等）自然增值	auditor 审计师
subsidiary 子公司，附带的	Financial Accounting Standards Board (FASB) 财务会计标准委员会
periodicity assumption 会计分期假设	

Exercises

1. Translations.

(1) 固定资产

(2) 长期债务

(3) 财务报表

(4) 一致性原则

(5) 持续经营假设

(6) 故意地

(7) attach importance to

(8) gross profit

(9) owner's equity

(10) budgetary accounting

(11) parent company

(12) accounting equation

2. Fill in the blanks according to what you have learned in this chapter.

(1) Accounting elements consist of assets, ________, owner's equity, ________, expenses and __________.

(2) Assets are ______________owned by a company.

(3) Assets are usually divided into ______________ and non-current assets.

(4) The basic accounting equation is: Assets = _____________ + ______________.

(5) At all times the accounting equation must be __________.

(6) ____________ assumption assume that the business will continue in operation for quite a long time.

(7) ____________ is the net assets of a business.

(8) _____________are debts of a business arising from past transactions or events, such as accounts payable, tax payable and salaries payable, etc.

3. Choose the correct answer.

(1) Which is the most common accounting period? (   )

A. a day　　B. a week　　C. a month　　D. a year

(2) Which of the following belongs to assets? (   )

A. Raw material　　B. Accounts payable

C. Rent expense　　D. Unearned revenue

(3) Which of the following belongs to non-current assets? (   )

A. Factory　　B. Cash

C. Bank deposit　　D. Inventory

(4) Which of the following belongs to liabilities? (   )

A. Accounts receivable　　B. Notes receivable

C. Short-term loan　　D. Paid-in capital

(5) Which of the following belongs to non-current liabilities? (　　)

A. Unearned revenue　　B. Long-term loan

C. Accounts payable　　D. Short-term loan

(6) Current assets are the economic resources that can be converted into cash or consumed (　　).

A. within one year　　B. in one operating cycle

C. over one year or one operating cycle　　D. within one year or one operating cycle

(7) The basic accounting equation is (　　).

A. Assets = Liabilities + Revenues

B. Assets = Liabilities + Owner's Equity + (Revenues − Expenses)

C. Assets = Liabilities + Owner's Equity

D. Assets = Liabilities + Owner's Equity + Profit

(8) In (　　), the activities of an entity are kept separate and distinct from the activities of its owner and all other economic entities.

A. Economic entity assumption　　B. Going concern assumption

C. Monetary unit assumption　　D. Periodicity assumption

(9) A company has Assets of $100,000 and Liabilities of $20,000. The Owner's Equity of the company would be (　　).

A. $100,000　　B. $20,000　　C. $800,000　　D. $120,000

(10) A company purchased supplies of $1,000 on credit. The effects of transaction on the Accounting Equation is (　　).

A. Assets		=	Liabilities	+	Owner's Equity
Supplies	Cash				
+$1,000	−$1,000				

B. Assets	=	Liabilities	+	Owner's Equity
Supplies		Accounts Payable		
+$1,000		+$1,000		

C. Assets	=	Liabilities	+	Owner's Equity
Supplies				Revenue
+$1,000				+$1,000

D. Assets	=	Liabilities	+	Owner's Equity
Cash				Expense
−$1,000				−$1,000

4. Analysis of economic transactions.

Assume the following transactions took place during January, 2014, for James Co.

(1) The owner invested $10,000 cash in the business.

(2) James Co. purchased office supplies for cash, $500.

(3) Paid office rent for January, $800.

(4) Bought office furniture $2,000, not paid.

(5) Paid $2,500 on accounts payable.

(6) Borrowed $3,000 from the local bank.

Use the accounting equation to analysis the transactions and put the data into the following Exhibit 1-1.

Exhibit 1-1

Transactions	Assets		Liabilities		Owner's Equity	
	Increase	Decrease	Decrease	Increase	Decrease	Increase
1						
2						
3						
4						
5						
6						
Totals						

Chapter 2

Accounting Cycle

Learning Objectives:

By the end of this chapter, the learners are supposed to:

- gain some knowledge about the procedures of accounting cycle
- have a good command of T-accounts, journals, ledger and so on
- be familiar with the terms and useful expressions in this chapter
- develop skills in adjusting and closing an account

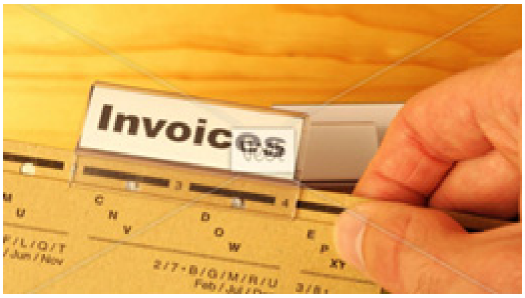
Pre-class Task

A-Shine Company sold 10 tons of material, amount to $20,000, with VAT output tax $3,400. The accounting department received a check from the purchasing company and deposited $23,400 into the bank.

In this economic transaction, how is the accounting information recorded?

What should the accountant do with the source document?

And what is the accounting cycle about this economic transaction?



Introductory Remarks

Accounting cycle is a sequence of steps that occur in order over an established period of time to record, classify, and summarize accounting data, which is typically the length of one month, a quarter of a year, or a whole year.

These procedures are repeated continuously to enable the business to prepare new and up-to-date financial statements at reasonable intervals. The accounting cycle is generally made up of the following steps:

1. Analyze transactions and business documents.
2. Journalize transactions.
3. Post journal entries to accounts.
4. Determine account balances and prepare a trial balance.
5. Prepare a worksheet.
6. Prepare financial statements.
7. Journalize and post adjusting entries.
8. Make closing entries.
9. Prepare a post-closing trial balance.
10. Make reversing entries.

Of all these steps, analyzing, journalizing and posting (step 1 to 3) are indispensable parts of accounting cycle during each accounting period, step 4 to 9 occur only at the end of the accounting period, and step 10 occurs only at the start of the next accounting period.

Section 1 T-Accounts and Double-entry System

2.1.1 T-Accounts

Accounts record transactions in a company's accounts. T-Account, which is the simplest form

of account, is so called just because it looks like the capitalized letter T. On top of the T-account is the title of the account written in the middle, the left side of the T-account is called Debit, while Credit is on the right side. Often Debit and Credit are abbreviated as Dr. and Cr.. As is shown in ***Exhibit 2-1***, for the asset accounts, the debit side represents the increases of assets and the credit side represents the decreases. For the liabilities and owner's equity accounts, the credit side records the increases and the debit side records the decreases. The difference between the debit and credit is called the balance of the account.

T-account is helpful in preparing general ledger accounts so that it is considered to be the backbone of a company's accounting system. All T-accounts should adhere to the following accounting equation:

Assets = Liabilities + Owner's Equity

Exhibit 2-1

Title of Account	
Left or Debit Side	*Right or Credit Side*

2.1.2 Double-entry System

Double-entry system is the foundation of accounting and is also regarded as the heart of modern accounting, where each transaction affects two separate accounts, one on the debit side and the other on the credit side, every entry to an account requires a corresponding and opposite entry to a different account, a change in one account must be matched with a change in another account. By convention, increases in assets and expenses are recorded as debits, while increases in liabilities, owner's equity, revenues and profit are recorded as credits. All accounting systems operate on the basis of the double-entry system. Double-entry system adheres to two important rules:

Assets = Claims (Liabilities and Owner's Equity)

Total Debits = Total Credits

The following ***Exhibit 2-2*** summarizes the rules of double-entry system:

Exhibit 2-2

Assets and Expenses	
Dr. + *(Increases)*	*Cr.* − *(Decreases)*

Liability, Owner's Equity, Revenues and Profit	
Dr. − *(Decreases)*	*Cr.* + *(Increases)*

The double-entry system is pretty helpful when we need to find a mistake in financial records. If total debits do not equal total credits, there must be a mistake. However, double-entry bookkeeping is not a guarantee that no errors have been made, for example, the wrong ledger account may have been debited or credited, or the entries completely reversed. Therefore, to some degree, such a system may be economical but it is incomplete, unscientific and full of defects.

Example 2.1

Suppose that a company purchases a file cabinet for $300, not paid. The effects of this economic transaction are: The asset (fixed asset account) increased by $300, and at the same time, the liability (accounts payable account) increased by the same amount.

Fixed Asset		*Accounts Payable*	
Dr.	*Cr.*	*Dr.*	*Cr.*
+$300	*–*	*–*	*+$300*

Assets = Liabilities + Owner's Equity

+$300   +$300

It can also be illustrated as in ***Exhibit 2-3:***

Exhibit 2-3

Account Type	Debit	Credit
Assets	Increase	Decrease
Liabilities	Decrease	Increase
Owner's equity	Decrease	Increase
Revenues	Decrease	Increase
Expenses	Increase	Decrease

Section 2 Journals and Ledger

2.2.1 Journals

In practice, economic transactions are recorded directly into the accounts, whereas, it is difficult to follow individual transactions with the debit in one account and the credit in another, especially when many a transaction are involved, errors in analyzing or recording transactions are not easy to find, thus a journal is a best solution to this problem. The journal is also called the book of original entry. An accounting journal may fall into two types: a general journal or a special journal. A general journal is a relatively simple record where any type of business transactions can be recorded. While a special journal is used to record the most frequent transactions in a business.

A general journal entry includes the date of the transaction, the titles of the accounts debited and credited, the amount of each debit and credit, and an explanation of the transaction also known as a narration. There are four types of special journals: cash receipts journals, cash payments journals, sales journals and purchases journals.

Example 2.2

For illustration of the general journal, we will enter some transactions data for James Agency Company (a law agency) in January, 2014 into general journal ***(see Exhibit 2-4)****.*

Transaction *1: On January 1st, the owner of James Agency invested $20,000 cash to run the business.*

Transaction *2: On January 1st, rent an office, a total of $5,000 cash was paid in advance for two years.*

Transaction *3: On April 4th, purchased office supplies $400 in cash.*

Transaction *4: On April 5th, purchased office equipment $1,800, not paid.*

Transaction *5: On July 1st, James Agency Company signed up a contract with Hengda Import &Export Trade Company to perform consulting service, and the term of this contract was one year. James Agency Company received an advanced cash payment in the amount of $8,000.*

Transaction *6: On August 25th, to be commissioned in court by a client for that the company received $2,000 cash.*

Transaction *7: On September 30th, James Agency Company loaned JMK Company $9,000 for investing. JMK Company issued a one year note, with an annual interest rate at 8%.*

Transaction *8: On September 30th, received a telephone bill of $900.*

Exhibit 2-4

Date		General Journal			
Year 2014		Account Titles and Explanation	Post Ref.	Debit	Credit
Jan.	1	Cash		20,000	
		James Agency, Capital			20,000
	1	Prepaid Rent		5,000	
		Cash			5,000
Apr.	4	Office Supplies		400	
		Cash			400
Apr.	5	Office Equipment		1,800	
		Accounts Payable			1,800
Jul.	1	Cash		8,000	
		Unearned Revenue			8,000

续表

Date		General Journal			
Year 2014		Account Titles and Explanation	Post Ref.	Debit	Credit
Aug.	25	Cash		2,000	
		Consulting Revenue			2,000
Sept.	30	Notes Receivable		9,000	
		Cash			9,000
Sept.	30	Telephone Expense		900	
		Accounts Payable			900

2.2.2 Ledger

As we know, an account is a record of the changes and balances in the value of an individual item of an organization. An enterprise may use several accounts, after complete transaction data are recorded, portions of the data are summarized and transferred to another journal, which is called the ledger. A general ledger contains all the accounts for recording transactions relating to a company's assets, liabilities, owner's equity, revenues, and expenses.

As a means of formal recording, we shall use a set of journals in which business transactions are analyzed in terms of debits and credits and recorded in chronological order. It is regarded as the "reference book" of the accounting system and is used to classify and summarize transactions and to prepare data for financial statements.

There are two types of ledgers: general and subsidiary. A general ledger contains all of the balance sheet and income statement accounts. It can be shown in ***Exhibit 2-5***. While a subsidiary one groups together quite a few individual accounts with common characteristics into a separate ledger. It can be shown in ***Exhibit 2-6***.

In the accounting system, unnecessary details are not recorded in the general ledger but are removed to the subsidiary ledger.

Exhibit 2-5

General Ledger

Account Title: James Agency, Capital Folio No:

Date		Descriptions	P.R.	Debit	Credit	Dr. or Cr.	Balance
Jan.	1	Investment in the business			20,000	Cr.	20,000

Exhibit 2-6

Subsidiary Ledger

Gen. Led. Account Title:

Sub. Led. Account Title: Folio No:

Date		Descriptions	P.R.	Debit	Credit	Dr. or Cr.	Balance

Section 3 Trial Balance

At the end of each accounting period, usually the end of a month, a trial balance is needed after all the regular entries for transactions have been journalized and posted to the ledger. A trial balance is a list of all the general ledger accounts (both revenue and capital) with their respective debit and credit balances, it is a part of the double-entry bookkeeping system and uses the classic "T-account" format for presenting values. The purpose of it is to prove that for every debit entry a corresponding credit entry has been made. If there are no errors in the journals and the journals are posted correctly to the general ledger, the total of the debits should equal the total of the credits. If the total of the debit column does not equal the total value of the credit column , then it shows there is an error in the nominal ledger accounts. This error must be found before a profit and loss statement and balance sheet are produced.

Exhibit 2-7 shows the trial balance of James Agency Company on December 31, 2014.

Exhibit 2-7

James Agency Company

Trial Balance

December 31, 2014

Account	Debit	Credit
Cash	15,600	
Notes receivable	9,000	
Prepaid rent	5,000	
Office supplies	400	
Office equipment	1,800	
Accounts payable		2,700

Unearned revenue		8,000
Consulting revenue		2,000
Telephone expense	900	
James Agency, capital		20,000
Total	32,700	32,700

Section 4 Accounting Adjustments

Many of the business transactions influence the net income of more than one accounting period. In order to reflect the realistic net income of a business based on the accrual-basis accounting, all revenues earned and all expenses produced during the same period must be recorded. Therefore, at the end of the accounting period, it is needed to adjust some account balances to strike a proper balance between expenses and revenues.

Accounting adjustments occur after the journals have been posted but before financial statements are prepared. There are five types of adjusting entries: accruals; deferrals; estimates; re-evaluations and error corrections.

Example 2.3

Adjustment 1:

Transaction 2: On January 1st, rent an office, a total of $5,000 cash was paid in advance for two years.

Analysis: December 31st, the company has to record $2,500 as rent expense. The recognition of expense acts to decrease assets and owner's equity. Decrease in owner's equity is recorded by a debit to rent expense. Decrease in assets is recorded by a credit to prepaid rent.

Adjusting Entries:

Dec. 31st		
Dr. Rent Expense	*2,500*	
Cr. Prepaid Rent		*2,500*

Adjustment 2:

Transaction 5: On July 1st, James Agency Company signed up a contract with Hengda Import &Export Trade Company to perform consulting service, and the term of the contract was one year. James Agency Company received an advanced cash payment in the amount of $8,000.

Analysis: December 31st, the company had provided services for 6 months, so James Agency Company should be record $4,000 as consulting service revenue. The recognition of revenue acts

to decrease liabilities and increase owner's equity. The decrease in liabilities is recorded by a debit to unearned revenue, and the increase in owner's equity is recorded by a credit to consulting revenue.

Adjusting Entries:

Dec. 31st

Dr. Unearned Revenue 4,000

Cr. Consulting Revenue 4,000

Adjustment 3:

Transaction 7: On September 30th, James Agency Company loaned JMK Company $9,000 for investing. JMK Company issued a one year note, with an annual interest rate at 8%.

Analysis: December 31st, James Agency Company has to record $180 as interest revenue. The recognition of revenue acts to increases assets and owner's equity. The increase in assets is recorded by a debit to interest receivable, and the increase in owner's equity is recorded by a credit to interest revenue.

Adjusting Entries:

Dec. 31st

Dr. Interest Receivable 180

Cr. Interest Revenue 180

The ***Exhibit 2-8*** shows the adjusted trial balance of James Agency Company On December 31, 2014.

Exhibit 2-8

James Agency Company

Adjusted Trial Balance

December 31, 2014

Account	Debit	Credit
Cash	15,600	
Notes receivable	9,000	
Interest receivable	180	
Prepaid rent	2,500	
Office supplies	400	
Office equipment	1,800	
Accounts payable		2,700
Unearned revenue		4,000

Telephone expense	900	
Rent expense	2,500	
Consulting revenue		6,000
Interest revenue		180
James Agency, capital		20,000
Total	32,880	32,880

Section 5 Closing an Account

Besides adjusting entries, closing entries must also be made at the end of each accounting period. Closing sets the balance of the revenue and expense accounts back to zero in order to measure the net income in the next accounting period. The revenue and expense accounts are called temporary accounts, which will be closed at the end of each accounting period.

Example 2.4

Closing Entries 1:

Jun. 30		
Dr. Consulting Revenue	*6,000*	
Interest Revenue	*180*	
Cr. Retained Earnings		*6,180*

Closing Entries 2:

Jun. 30		
Dr. Retained Earnings	*3,400*	
Cr. Rent Expense		*2,500*
Telephone Expense		*900*

Closing Entries 3:

Jun. 30		
Dr. Retained Earnings	*2,780*	
Cr. Distributions		*2,780*

Special Terms and Useful Expressions

accounting cycle 会计循环	journalize 在日记中记录
classify 分类	post 过账

quarter 季度，四分之一，一刻钟	balance 余额，平衡
procedure 程序	trial balance 试算平衡表
up-to-date 最新的	transfer 转移
financial statement 财务报表	temporary 临时的
adjust 调整	permanent 永久的
consist of 由…组成	be abbreviated as 缩写为
respective 各自的，分别的	backbone 骨干，支柱
nominal 名义上的，票面上的	subsidiary ledger 明细分类账
adjusting entries 调整分录	strike 达到，敲打
double-entry 复式记账法	deferral 延期
capitalized 大写的	

Exercises

1. Fill in the blanks according to what you have learned in this chapter.

(1) A T-Account contains three parts: __________, debit side, and __________.

(2) For the asset accounts, the __________ side records the increases, and the right side records the __________.

(3) The left side of the T-account is called __________, while Credit is on the __________ side.

(4) The difference between the debit and credit is called the _________ of the account.

(5) Accounting cycle is a sequence of steps that occur in order over an established period of time to __________, __________, and __________ accounting data.

(6) The balance in the general ledger must equal to the _________ of the balance in its subsidiary ledgers.

2. Choose the correct answer.

(1) December 31, 2014, a company total assets were \$800,000 and owner's equity were \$300,000. The liabilities of the company would be (　　).

A. \$300,000　　B. \$500,000　　C. \$600,000　　D. \$800,000

(2) The right side of an account is used to record (　　).

A. debits　　B. credits　　C. decreases　　D. increases

(3) (　　) account's left side records the increases.

A. Accounts receivable　　B. Accounts payable

C. Notes payable　　D. Paid-in capital

(4) January 1st, 2014, The Sunny Computer Company paid $200 for office supplies and purchased additional office supplies on account for $400. In the end of this month, the Company paid $400 for accounts payable. What is the balance in the supplies account (　　)?

A. $200　　B. $400　　C. $600　　D. $1,000

(5) Which of the following statements about debit and credit rules is correct? (　　)

A. Increase in liabilities is recorded by credit.

B. Increase in assets is recorded by credit.

C. Decrease in liabilities is recorded by credit.

D. Decrease in expenses is recorded by debit.

(6) The purchase of office equipment on credit will (　　).

A. increase an asset and decrease a liability

B. increase an asset and increase a liability

C. increase an asset and increase another asset

D. decrease an asset and decrease a liability

(7) Purchase on credit should be recorded in (　　).

A. Cash receipts journal　　B. Cash payment journal

C. Sales journal　　D. Purchase journal

(8) The closing process (　　).

A. sometimes involves the cash account

B. will affect all the permanent accounts

C. resets all temporary accounts to zero so the accounts are ready for the beginning of the next accounting period

D. results in increasing assets by net income

3. Judge the following sentences are true(T) or false(F).

(1) A revenue received in advance should be classified as a asset account. (　　)

(2) The normal balance of bank deposit account should be in credit side. (　　)

(3) For a given account, the debit amount must equal to the credit amount. (　　)

(4) There are four types of special journals: cash receipts journals, cash payments journals, sales journals and purchases journals. (　　)

(5) The number of debit is entered on the right side of a T-account. (　　)

(6) Accounting cycle is a sequence of steps that occur in order over an established period of time to record, classify, and summarize accounting data. (　　)

4. Case analysis.

The following is the JMK Company's trial balance on April 1, 2014.

JMK Company

Trial Balance

April 1, 2014

Account	Debit	Credit
Cash	28,000	
Accounts receivable	9,000	
Accounts payable		3,500
Common stock		10,000
Retained earnings		23,500
Total	37,000	37,000

During April 2014, JMK Company completed the following transactions:

On Apr. 1st, paid $1,000 for office rent for this month.

On Apr. 5th, performed service for a customer and received $5,000 in cash.

On Apr. 8th, purchased equipment $3,000, with paying $500 in cash, and issued a note for the remaining $2,500.

On Apr. 15th, paid $2,800 on accounts payable.

On Apr. 18th, received $8,000 of accounts receivable.

On Apr. 20th, performed customer service and earned revenue on account, $3,000.

On Apr. 25th, purchased office supplies on credit, $400.

On Apr. 30th, paid $5,000 wages for employees in cash.

You are required to:

① Prepare general journal for JMK Company.

② Prepare the trial balance of JMK Company on April 30, 2014.

Chapter 3

Assets

Learning Objectives:

By the end of this chapter, the learners are supposed to:

- gain some knowledge about accounting current assets and long-term assets
- have a good command of the features of every kind of assets
- learn to calculate the inventory
- be familiar with the terms and useful expressions in this chapter

Pre-class Task


Computer


Cash


Truck

Besides the computer, cash, and the truck in the pictures, can you list some other assets in a company?

Introductory Remarks

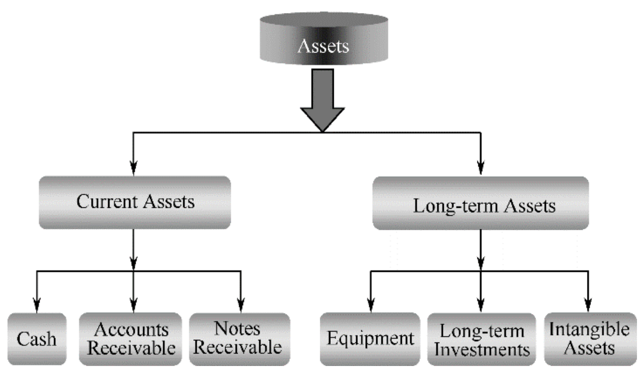
As mentioned in chapter 1, assets are economic resources owned or controlled by a specific entity as a result of past transactions or events, which are measurable by money value. As an asset of any entity, it usually has the following characteristics:

1. It can be owned or controlled by an entity.
2. It is caused by the past economic transactions or events.
3. It can bring future economic benefits into the entity.

From an accounting perspective, assets can be broadly classified into current assets and long-term assets. Current assets are expected to be used or collected within one year or an operating cycle, including cash, accounts receivable, short-term notes receivables, merchandise inventory, marketable securities and so on. Long-term assets are expected to be used by the business for periods more than one year or an operating cycle, which include equipment, factories or plants, property or land, long-term notes receivables, long-term investments and intangible assets (patents, trademarks).

The structure of assets can be shown in ***Figure3-1***:

Figure 3-1 *The structure of Assets*



Section 1 Current Assets

Current assets or short-term assets are cash and other resources which are expected to be realized in cash or consumed in the business within one year of the balance sheet date or an operating cycle of a business. Current assets are important in assessing a business's ability of paying off short-term debts.

3.1.1 Cash

In accounting, cash is defined as any deposit that banks will accept including coins, paper money, checks, money orders, bank deposits and so on. When products or services are sold, cash is received. When expenses are incurred, cash is paid. In the balance sheet, cash is listed first among the current assets because it is the most current and liquid of all assets. Some items may be confused with cash but generally are classified under other items of the balance sheet according to GAAP, among which are certificates of deposit, bank overdrafts, posted-checks, IOUs, travel advances, and postage stamps.

● **Internal Controls over Cash**

Cash is more likely to suffer from theft than any other asset. In addition, most of the transactions of a business are closely related to cash. Due to these reasons, internal control over cash is of great significance to both management and the staff of a business. A complete system of internal controls over cash would involve the following aspects:

1. Separate the function of handling cash from the recording of transactions.
2. The work and responsibilities of cash handling and recording should be divided.
3. All cash receipts are required to be deposited intact daily in the bank.
4. Make all payment by check. Only small payments can be made in cash from a petty cash fund.
5. Separate the function of approving expenditures from that of signing checks.

Example 3.1

Let's refer to Example 2.2, taking the information of <u>*Transaction No.2*</u>*: On January 1st, rent an office, a total of $5,000 cash was paid in advance for two years.*

In this case, the transaction increases prepaid rent for $5,000 and decreases cash for $5,000. To increase the prepaid rent account it is debited, and to decrease cash account it is credited. The journal entry would be:

Dr. Prepaid Rent	*5,000*	
Cr. Cash		*5,000*

Let's take the information of <u>*Transaction No.6*</u>*: On August 25th, to be commissioned in court by a client for that the company received $2,000 cash.*

In this case, the transaction increases cash for $2,000 and consulting revenue for $2,000. To increase the cash account it is debited, and to increase consulting revenue account it is credited. The journal entry would be:

Dr. Cash *2,000*

Cr. Consulting Revenue *2,000*

3.1.2 Accounts Receivable

The term receivable refers to a company's claims for money, goods or services. Receivable is a product of transactions of the sale of merchandise or service on credit and lending of money. Receivables are generally divided into two categories: trade receivables and non-trade receivables.

Trade receivables are accounts owed by customers for goods and services sold as part of the normal operations of a business. They are undoubtedly the most significant receivables of a business, which include accounts receivable and notes receivable. Accounts receivable are made up of money due from customers as a result of an organization's normal business operations.

Non-trade receivables include such receivables as interest receivable, loans to business staff, advances to employees and income taxes refundable. These receivables do not result from the transactions of the business and are classified and reported as separate items in the balance sheet.

- **Accounting for Accounts Receivable**

On the balance sheet, accounts receivable are reported as a current asset and considered to be part of an organization's working capital. As a current asset, accounts receivable are expected to be converted into cash within the annual operating cycle of a business, which for most businesses is generally one year and corresponds to the twelve-month fiscal year used for financial reporting purposes. This, however, does not imply that it should take one year to collect individual receivable balances.

No one can tell in advance which accounts can be collected and which ones are not expected to be collected. So the management of accounts receivable is extremely important since the collection of outstanding receivables represents the single most important source of cash for all organizations selling goods on open account. There is no denying that the accounting for receivable is not so straightforward since there are sales discount, sales returns and allowances. Moreover, some customers will not pay for the goods or services they purchase on time.

If an account receivable becomes uncollectible, bad debt occurs. Two main ways are used to account for uncollectible accounts: the direct write-off method and the allowance method.

Direct write-off method: Under the direct write-off method, when specific amount of accounts receivable is determined to be uncollectible, the bad debts are directly written off from the accounts receivable account in the current period. The entry to write off the account that has been determined

to be uncollectible is as follows:

Example 3.2

On February 23, 2014, Smith's Company had credit sales totaling $35,000. If the payment was received on March 25 except $1,000 from Panda Toys Company which still did not receive. The entry to record the total collections would be:

Dr. Cash 34,000

Cr. Accounts Receivable 34,000

Example 3.3

On March 31, 2014, suppose Smith's Company proves that accounts receivable of $1,000 from Panda Toys Company can not be collected. The entry under the direct write-off method would be:

Dr. Bad Debts Expense 1,000

Cr. Accounts Receivable, Panda Toys Company 1,000

Allowance method: The allowance method adheres to the matching principle because it accounts for bad debts during the same period in which the sales occurred. Under this method, a company uses its experience or industry averages to estimate the amount of accounts receivables that will not be collected.

Example 3.4

Assume that in the end of 2014, the accounts receivable in Victor Company totaled $50,000. If it is estimated from past experience that 1% of accounts receivable would be uncollectible, the entry under the allowance method would be:

Dr. Bad Debts Expense 500

Cr. Allowance for Bad Debts 500

Example 3.5

In 2015, when the bad debts of $500 proves to uncollectible, the balance in allowance for bad debts account was reduced by $500. The entry would be:

Dr. Allowance for Bad Debts 500

Cr. Accounts Receivable 500

3.1.3 Notes Receivable

A note receivable (also called a promissory note) is a written promise to pay certain amount of money on demand or at a definite time for goods or services purchased. The date that a note is to be paid is called the maturity date. The amount that is due at the maturity date is called the

maturity value. The maturity value of a note is the sum of the face value and the interest at maturity date.

The basic formula for computing maturity value is as follows:

Maturity Value = Face Value + Interest

Interest = Face Value × Interest Rate × Time

Example 3.6

On September 30th, Zimmer Company provided consulting service to ABC Company, ABC Company issued a $3,000 note to Zimmer Company. So the entry in Zimmer's book would be:

Dr. Notes Receivable 3,000

Cr. Consulting Revenue 3,000

Suppose ABC Company's note was conditioned for three months with an annual interest rate at 9% . On the maturity date, Zimmer had to calculate the interest of the note:

Interest = Face Value × Interest Rate × Time

= 3,000 × 9% × 3/12

= 67.5

Zimmer's book entry would be:

On December 31:

Dr. Cash 3,067.5

Cr. Notes Receivable 3,000

Interest Revenue 67.5

3.1.4 Inventories

Inventory refers to various assets that are stocked for the purpose of sale, production or consumption during the process of the production and operation for a business.

For merchandising enterprises, inventory consists of goods possessed for sale in the regular course of business. For manufacturing enterprises, inventory is mainly divided into three categories: raw materials, goods in process of manufacture, and finished goods. Because inventory will generally be sold within a year or during a company's normal operating cycle, it is classified under current assets.

- **Accounting for Inventory**

Accounting for inventory plays a significant role in the accounting system of a business because selling inventory is the heart of a business.

On the balance sheet, it is listed just after receivables. When products are sold, they don't belong to assets any longer. Their costs must be removed from the asset (inventory) on the balance sheet and reported on the income statement as an expense called cost of goods sold.

There are two main systems of inventory accounting, periodic and perpetual. In a periodic system, only the revenue from sales is recorded each time a sale is made. No entry is made to record the cost of the goods which have been sold. Therefore, in order to determine the cost of the inventory at the end of an accounting period, a physical inventory must be taken. While in a perpetual system, the inventory account is increased (debited) when inventory is purchased and decreased (credited) when inventory is sold. Accounting for inventory with the perpetual system is similar to accounting for cash.

***Periodic Inventory System*:** Under periodic inventory system, the cost of goods sold account doesn't exist, it is calculated at the end of the period. First, it is necessary to determine the beginning inventory, second, the cost of goods purchased, third, ending inventory. The business takes physical count of the entire inventory on hand at the end of the accounting period. And then, we can calculate the cost of goods sold.

Example 3.7

Victor Company is a merchandising company. Suppose Victor Company's beginning inventory is $24,000 on Jan. 1, 2014, during its operations, Victor Company purchased $20,000 inventory. In the end of this year, its ending inventory is $15,000. Using these figures, the cost of goods available for sale is $44,000 and the cost of goods sold is $29,000, *inventory was shown as below:*

Beginning inventory	*$24,000*
Add: Purchases	*$20,000*
Cost of goods available for sale	*$44,000*
Less: ending inventory	*$15,000*
Cost of goods sold	*$29,000*

So, the formula for computing Cost of Goods Sold is as follows:

Cost of Goods available for Sale = Beginning Inventory + Purchase

Cost of Goods Sold = Cost of Goods available for Sale − Ending Inventory

***Perpetual Inventory System*:** In the perpetual inventory system, there are four different inventory cost flow methods to use:

1. Specific identification method, it is usually used when a business buys goods that are expensive and easy to identify and it is often used by dealers in automobile, airplanes, ships, etc.

2. First-in, First-out (FIFO) method, it means that the items purchased the earliest are sold the

first.

3. Last-in, First-out (LIFO) method, it means that the items purchased the latest are sold the first.

4. Weighted-average method, it provides that the average unit cost is applied to determine the cost of goods sold. It is calculated as follows:

Weighted-average unit Cost = (Cost of beginning Inventory + Total Cost of Purchases) ÷ (Units in beginning Inventory + Units Purchased)

Example 3.8

Jackson Company had an inventory balance of 10 units at the beginning of March, $100 per unit, totaling $1,000. The company made two purchase of the same item during the month: Purchase 1 for 25 units at $150, purchase 2 for 35 units at $200. Total sales of March were $62 units.

◆ *Under FIFO method, the cost of goods would be calculated in* ***Exhibit 3-1****:*

Exhibit 3-1

Beginning Inventory	10 units × $100	$1,000
Purchased 1	25 units × $150	$3,750
Purchased 2	35 units × $200	$7,000
Cost of Goods Available for Sale	70 units	$11,750
Cost of Goods Sold:	62 units	
Sold	10 units × $100	$1,000
Sold	25 units × $150	$3,750
Sold	27 units × $200	$5,400
Cost of Goods Sold	62 units	$10,150
Ending Inventory	8 units × $200	$1,600

◆ *Under LIFO method, the cost of goods would be calculated* in ***Exhibit 3-2****.*

Exhibit 3-2

Beginning Inventory	10 units × $100	$1,000
Purchased 1	25 units × $150	$3,750
Purchased 2	35 units × $200	$7,000
Cost of Goods Available for Sale	70 units	$11,750
Cost of Goods Sold:	62 units	
Sold	35 units × $200	$7,000
Sold	25 units × $150	$3,750

续表

Sold	2 units × $100	$200
Cost of Goods Sold	62 units	$10,950
Ending Inventory	8 units × $100	$800

◆ *Under Weighted-average method, the cost of goods would be calculated as follows:*

The Weighted-average unit cost = $11,750 ÷ 70 = $167.86

Cost of Goods Sold = 62 × $167.86 = $10,407.32

Section 2 Long-term Assets

Long-term assets are acquired for use in the operation of the business with a useful life of more than one year and are not resold to customers. They normally have high economic values, many accounting periods and a variety of forms. Long-term assets involve fixed assets, intangible assets as well as other assets.

3.2.1 Fixed Assets

Fixed assets are long-term or relatively permanent tangible assets that are used in the normal business operations and are not intended for sale to customers, the unit value of fixed assets is above the prescribed criteria and their original physical forms remain during the process of utilization, including building and structures, machinery and equipment, transportation equipment, tools and implement, etc.

● **Accounting for Fixed Assets**

Fixed assets are treated in the financial statements as “capital expenditure” rather than “revenue expenditure”, which means that when a business buys a fixed asset, the amount paid is treated as an asset in balance sheet rather than as a cost in the income statement.

The accounting value (“net book value”) of fixed assets consists of two parts: the original cost of the fixed assets (i.e. what they were bought for) and an allowance for the fact that fixed assets do not last forever (i.e. they will need to be replaced at some stage or sold for less than they were bought for). This allowance is known as “depreciation”.

There are two factors which cause a decline in the ability of a fixed asset to provide services: physical depreciation caused by wear and tear from use and from the action of the elements of decreases in usefulness. Second, function depreciation caused by inadequacy and obsolescence of

decreases in usefulness. A fixed asset becomes inadequate if its capacity can not satisfy the needs of increased production. A fixed asset is obsolete if the item which it produces is no longer in demand if a newer machine can produce an item of better quality at the same or lower cost. Advances in technology during the 21st century makes obsolescence an increasingly important cause of depreciation.

In accounting practice, the four most commonly used depreciation methods are: the straight-line method, the units-of-production method, the double-declining balance method and the sum-of-years'-digits method.

Straight-line Method: Under the straight-line method, depreciation expense is the same for each year of the asset's useful life. Thus the depreciation amount is the same for each year. The formula under this method is:

Annual Depreciation Expense = (Cost − Residual Value) / useful life, in years

Example 3.9

Assume that Victor Company bought a machine that cost $10,000 On Jan. 1, 2014, the company estimated the machine had a useful life of five years, with a salvage value of $500. Taking the numbers, the entry to record this purchase was:

Dr. Machine	*10,000*	
Cr. Cash		*10,000*

the annual depreciation expense is calculated as:

Annual Depreciation Expense = ($10,000 − $500)/5

= $1,900

The expense recognition is shown in a contra asset account titled accumulated depreciation. The entry to record the straight-line depreciation each year was:

Dr. Depreciation Expense	*1,900*	
Cr. Accumulated Depreciation, machine		*1,900*

Depreciation expense is reported on the income statement, accumulated depreciation is reported on the balance sheet. Book value is the difference between the original cost and the accumulated depreciation, it is shown on the balance sheet of the fiscal year ends on December 31:

Fixed Assets:

Machine	*$10,000*
Less: Accumulated Depreciation	*$1,900*
Book Value	*$8,100*

Units-of-production Method: Under this method, the useful life is expressed in terms of the total units of production expected from the asset, rather than in terms of a time period. The formula of this method is:

$$\textbf{Depreciation Expense per Unit} = \frac{\textbf{Cost} - \textbf{Residual Value}}{\textbf{Estimated Total Units of Production}}$$

Depreciation Expense = Depreciation Expense per Unit × Units of Production during the Year

Example 3.10

Assume that JWK Company bought a truck on Jan. 1, 20 × 5 which cost \$20,000. The truck was expected to run for a total of 90,000 miles, with a salvage value of \$2,000. If the truck was driven 18,000 miles in the first year, the depreciation expense for the first year would be calculated as follow:

Depreciation Expense Per Unit = (\$20,000 −\$2,000)/90,000 = \$0.2 per mile

Depreciation Expense = \$0.2 per mile × 18,000 = \$3,600

In the first year, the entry to record under the units-of-production method was:

Dr. Depreciation Expense	*3,600*	
Cr. Accumulated Depreciation, truck		*3,600*

Double-declining Balance Method: This method is sometimes called accelerated depreciation method. It needs to calculate a double-declining balance rate which is a specified percentage of the straight-line depreciation rate. Depreciation expense is calculated each year by applying this double-declining balance rate to the remaining book value of the asset. The formula of this method is:

Double-declining Balance Rate = Straight-line Depreciation Rate × 2

Depreciation Expense = Net Book Value × Double−declining Balance Rate

Net Book Value = Cost − Accumulated Depreciation

Example 3.11

Assume that JKW Company bought a machine that cost \$30,000 on Jan. 1, 20×5, this machine is estimated to have a useful life of five years, with a salvage value of \$1,000. Calculated the depreciation expenses by using double-declining balance method.

Double-declining Balance Rate = 20% × 2 = 40%

Depreciation Expense for 20×5 = \$30,000 × 40% = \$12,000

Depreciation Expense for 20×6 = (\$30,000−\$12,000) × 40% = \$7,200

Depreciation Expense for 20×7 = (\$30,000−\$12,000−\$7,200) × 40% = \$4,320

Depreciation Expense for 20×8 and 20×9 = ($30,000−$12,000−$7,200−$4,320−$1,000) / 2

= $2,740

Sum-of-Years'-Digits method: Sum-of-Years'-Digits is another method that uses depreciation rates based only on an asset's useful life. The following steps are to be taken to determine the amounts of the depreciation expense:

1. Sum up the figures that begin with the number of years the asset will be use, and go down to 1. For example, if an asset has 5 years useful life, the sum-of-years'-digits will be 5+4+3+2+ 1=15.

2. Determine the amount of depreciation for each year by multiplying the depreciable cost by the fraction of the figures from step one and their total amount. For example, the deprecation expense for the first year = depreciable cost × 5/15, the deprecation expense for the second year = depreciable cost × 4/15, and so on till the deprecation expense for the last year = depreciable cost × 1/15.

Example 3.12

Assume that JKW Company bought equipment that cost $20,000 on Dec.31, 20×6, this equipment was estimated to have a useful life of four years, with a salvage value of $1,000. By using the sum-of-years'-digits method, what is the amount of depreciation expense for the next five years?

Sum-of-Years'-Digits = 4+3+2+1 = 10

Depreciation Expense for 20×6 = ($20,000−$1,000) × 4/10 = $7,600

Depreciation Expense for 20×7 = ($20,000−$1,000) × 3/10 = $5,700

Depreciation Expense for 20×8 = ($20,000−$1,000) × 2/10 = $3,800

Depreciation Expense for 20×9 = ($20,000−$1,000) × 1/10 = $1,900

3.2.2 Long-term Investment in Securities

Long term investments include investments in bonds and stocks that aren't marketable. If they are marketable, they are not intended to be converted into cash in the short term.

Example 3.13

Assume that Victor Company invested in JKW Company by purchasing 10,000 shares of $8 par prefer stock in the beginning of 2014. JKW Company will pay 15% of interest at the end of every year. The entry to record the investment was:

Purchased 10,000 shares of JKW Company:

Dr. Investment in JKW Preferred Stock	*80,000*	
Cr. Cash		*80,000*

In the end of 2014, Victor Company received dividends from JKW Company:

Dr. Cash	*12,000*	
Cr. Dividends Revenue		*12,000*

3.2.3 Intangible Assets

Companies own a variety of physical assets, such as buildings, computers and equipment, which are tangible and can be touched or seen. In addition, companies also possess many assets which cannot be touched, felt, or seen, they are called intangible assets, including patents, trademarks, copyright and so on. These assets are long-term assets without physical forms and not held for sale but are useful in the operations of a business. Their value generally comes from the rights or privileges granted by governmental authority.

● **Accounting for Intangible Assets**

Intangible assets now account for a greater percentage of the economic value of successful businesses than ever before and they are considered as levers for sustainable performance and are critical for the future success of businesses in the present transition from a traditional to a new economy. Wealth and growth in today's economy are driven primarily by intangible assets. Intangible assets show up on a balance sheet.

The basic principles of accounting for intangible assets are:

1. Determining the initial cost.

2. Recognizing the periodic cost expiration, called amortization. Amortization results from the passage of time or a decline in the usefulness of the intangible assets.

The cost of intangibles is expended through amortization. Amortization of intangibles is computed on a straight-line basis over a maximum of 40 years. There are, however, the useful lives of most intangibles are shorter than their legal lives. Depreciation, depletion, and amortization are identical in concept. We should distinguish capital expenditures from revenue expenditures. Capital expenditures increase the capacity or the efficiency of an asset or extend its useful life. Accordingly, they are debited to an asset account. Revenue expenditures merely maintain the asset's usefulness and are debited to an expense account.

Example 3.14

Assume that on Jan. 1, 2014, Victor Company paid $20,000 to acquire a patent, and the patent was expected to have a useful life of 10 years. Acquisition and amortization entries for this transaction were:

Jan. 1, to acquire a patent:

Dr. Patent 20,000

Cr. Cash 20,000

Dec. 31, to amortize the cost of a patent:

Dr. Amortization Expense, Patent 2,000

Cr. Patent 2,000

Special Terms and Useful Expressions

perspective 观点，看法

inventory 存货

marketable securities 有价证券

patent 专利

trademark 商标

assess 评估

money order 汇票

bank deposit 银行存款

IOU (I Owe You) 欠条

intact 完好无缺

petty cash 备用金，小额现金

fiscal year 财政年度

allowance 津贴

bad debt 坏账

direct write-off method 直接冲销法

the allowance method 备抵法

promissory note 期票，本票

maturity date 到期日

periodic inventory system 实地盘存法

perpetual inventory system 永续盘存法

weighted-average method 加权平均法

First-in, First-out (FIFO) method 先进先出法

net book value 净账面价值

physical depreciation 物理折旧

function depreciation 功能折旧

obsolete 废弃的

contra asset account 资产备抵账户

units-of-production method 产量单位（折旧）法

salvage value 残值，剩余价值

double-declining balance method 双倍余额递减法

sum-of-years'-digits method 年数总和法

amortization 摊销

Exercises

1. Fill in the blanks according to what you have learned in this chapter.

(1) Assets can be classified into______ and long-term assets. Current assets are expected to

be used/collected within one year or_______, long-term Assets are expected to be used by the business for periods _______ or more than an operating cycle.

(2) Cash includes coins, ________, _________, _________, bank deposits and so on.

(3) In the balance sheet, _______is listed first among the current assets because it is the most current and________of all assets.

(4) Receivables are generally divided into ___________and non-trade receivables. Trade receivables include ________ and notes receivable.

(5) If an account receivable becomes uncollectible, a firm incurs a ________ loss. Two main ways are used to account for uncollectible accounts: the direct write-off method and ___________.

(6) A __________ is a written promise to pay certain amount of money on demand or at a definite time.

(7) The maturity value of a note is the sum of the face value and the________at maturity date.

(8) There are two main systems of inventory accounting, the _______ and the perpetual system.

2. Choose the correct answer.

(1) Which of the following items does not belong to current assets? (   )

A. Cash   B. Notes receivable

C. Inventory   D. Motor vehicles

(2) Which of the following items is the most liquid of all assets? (   )

A. Cash   B. Accounts receivable

C. Inventory   D. Fixed assets

(3) Current assets are not (   ).

A. bank deposit

B. expected to be converted to cash within a year or an operating cycle

C. expected to be last beyond a year

D. expected to be used up within a year or an operating cycle

(4) Inventory appears in the balance sheet (   ).

A. in the assets section   B. in the liabilities section

C. in the owner’s equity section   D. in the revenue section

(5) At the end of fiscal year, Generation Company’s accounts receivable account had a balance of $50,000 and allowance for bad debts account had a balance of $5,000. The expected net realizable value of the accounts receivable is (   ).

A. $50,000   B. $45,000   C. $55,000   D. $5,000

(6) Under allowance method of accounting for bad debts, the entry made when an account is written off is ( ).

A. Dr. Bad Debts Expense

Cr. Accounts Receivable

B. Dr. Bad Debts Expense

Cr. Allowance for Bad Debts

C. Dr. Allowance for Bad Debts

Cr. Accounts Receivable

D. Dr. Accounts Receivable

Cr. Bad Debts Expense

(7) Smith's Company uses an allowance method to account for bad debts. On October 31, 2014, the company recognized that one of the credit customers would not paying $4,000 bill. The entry to record this transaction is ( ).

A. Dr. Bad Debts Expense 4,000

Cr. Accounts Receivable 4,000

B. Dr. Bad Debts Expense 4,000

Cr. Allowance for Bad Debts 4,000

C. Dr. Allowance for Bad Debts 4,000

Cr. Bad Debts Expense 4,000

D. Dr. Allowance for Bad Debts 4,000

Cr. Accounts Receivable 4,000

(8) Which of the following items does not belong to fixed assets? ( )

A. Building B. Machinery C. Material D. Equipment

(9) How many ways to count the depreciation? ( )

A. Two B. Three C. Four D. Five

(10) JWK Company's bought a machine cost $3,000, the machine had a useful life of five years and a salvage value of $500, so straight-line depreciation would take ( ) of the machine's cost as depreciation expense each year.

A. $500 B. $600 C. $700 D. $800

(11) Which of the following items does not belong to intangible assets ? ( )

A. Inventory B. Patent C. Brands D. Copyrights

(12) Which of the following items does not belong to long-term assets ? ( )

A. Building B. Land C. Equipment D. Inventory

3. Case analysis.

(1) JDK Company is a law company, it provides consulting service for its customers. On October, 20×9, the following economic transactions incurred:

① Provided consulting service for A Company, $4,500 of consulting service revenue earned on account.

② Received $4,000 cash from A Company.

③On December 31, 20×4, A Company estimated from past experience that $500 of accounts receivable would not be collected.

④ On December 31, 20×4, the actual loss of $500 was recognized.

Required: Please make the company's accounting entries under allowance method according to the economic transactions.

(2) Assume that the inventory records of Smith's Company indicates the following table on September 30, 2014. The total sales of September were 340 units.

Sept. 1	Beginning inventory	100 units, at $15
	Purchased 1	80 units, at $16
	Purchased 2	110 units, at $17
	Purchased 3	90 units, at $18

Required: Please compute the end inventory and cost of goods sold, using FIFO method, LIFO method, and weighted-average method.

FIFO method:

Beginning Inventory		
Purchased 1		
Purchased 2		
Purchased 3		
Cost of Goods Available for Sale		
Cost of Goods Sold:		
Sold		
Sold		
Sold		

续表

Sold		
Cost of Goods Sold		
Ending Inventory		

LIFO method:

Beginning Inventory		
Purchased 1		
Purchased 2		
Purchased 3		
Cost of Goods Available for Sale		
Cost of Goods Sold:		
Sold		
Sold		
Sold		
Sold		
Cost of Goods Sold		
Ending Inventory		

Weighted-average method:

(3) ABC Company purchased equipment on Jan.1, 20×5, it cost \$30,000. The equipment had a useful life of five years and no salvage value. Please calculate the depreciation expense of each year under the straight-line method, the double-declining balance method and the Sum-of-Years'-Digits method.

① the straight-line method:

② the double-declining balance method:

Year	Remaining Book Value	Declining Balance Rate	Depreciation Expense
20×5			
20×6			
20×7			
20×8			
20×9			

③ the Sum-of-Years'-Digits method:

Year	Digit	Depreciation Rate	Depreciable Cost	Depreciation Expense
20×5				
20×6				
20×7				
20×8				
20×9				
Sum				

Chapter 4

Liabilities

Learning Objectives:

By the end of this chapter, the learners are supposed to:

- gain some knowledge about current liabilities and non-current liabilities
- know what risks are associated with non-current debt
- develop skills in accounting for liabilities
- be familiar with the terms and useful expressions in this chapter

Pre-class Task

In the picture above, we can see the man in red carrying heavy debts which makes him hardly stand up. If a company suffers a debt crisis, it will make the company hardly move. And if the company does not deal with these debts well, it will go bankrupt soon.

Debt is a kind of liabilities. Would you identify which phrases and terms are liabilities? Use (√) to mark the liabilities.

Phrases and Terms	Phrases and Terms
Accounts receivable ( )	Accounts payable ( )
Notes payable ( )	Notes receivable ( )
Fixed assets ( )	Unearned revenue ( )
Interest payable ( )	Interest receivable ( )
Wages payable ( )	Short-term loans ( )

Introductory Remarks

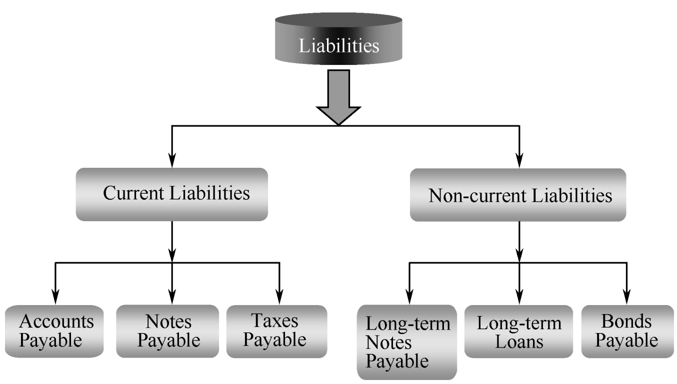
Liabilities are one of the three important elements of the accounting equation and the balance sheet. They are legal obligations for the future payment resulting from past transactions, but they are also sources of cash for operating and financing activities when they are incurred. Liabilities are usually classified in the balance sheet as current or non-current liabilities. Current liabilities are short-term obligations which must be paid from current assets or through the creation of other current liabilities within a year or an operating cycle, no matter how long it is. Non-current liabilities are long-term liabilities which are not due within the company's operating cycle if it is longer than one year.

As an liability of any entity, it usually has the following characteristics:

1. It results from the past economic transactions or events.
2. It is current obligations of the company.
3. It will result in the outflows of a future economic benefits.

The structure of liabilities can be shown in ***Figure4-1***:

Figure 4-1 *The structure of Liabilities*



Section 1 Current Liabilities

As we know, current liabilities are those amounts which are repayable within a period of less than 12 months or within an accounting cycle, the most common current liabilities are accounts payable, notes payable, interest payable, wages payable, taxes payable,etc.

4.1.1 Accounts Payable

Accounts payable is the most common current liabilities, which represents money owed to others for goods, supplies, and services purchased on account.

Accounts payable is shown as a liability on a company's balance sheet. In accounting practice, an accounts payable is recorded in the accounts payable sub-ledger, which is in accordance with invoices when goods are received and examined to ensure that goods purchased correspond with the contract in amount, quality, quantity, and categories. In addition, in accounting for accounts payable, interest is usually not considered. So, they represent short-term, interest-free loans from the supplier.

Example 4.1

Let's take the information of Example 3.7: Victor Company's accounts payable account had beginning balance of $24,000 in 2014. On Jan. 1, 2014, suppose Victor Company purchased $20,000 inventories on account. The journal entry would be:

Dr. Inventory	*20,000*	
Cr. Accounts Payable		*20,000*

Example 4.2

On Feb. 15, 2014, suppose Victor Company purchased office supplies $600 on account. The journal entry would be:

Dr. Office Supplies	*600*	
Cr. Accounts Payable		*600*

When $600 accounts payable were paid off 30 days later, the journal entry would be:

Dr. Accounts Payable	*600*	
Cr. Cash		*600*

4.1.2 Notes Payable

Notes payable refers to obligations in the form of written promissory notes, which usually

requires the borrower to pay interest. These notes can be used to grant bank loans, to pay suppliers for goods and services purchased, and to get credit from other sources. Notes payable may be used instead of accounts payable because they supply documentation of the obligation in case legal remedies are needed to collect the debt.

Example 4.3

Assume that Victor Company borrowed $80,000 from the bank on Nov. 30, 2014. The Company signed a one year term, 12% note. The journal entry of Victor Company would be:

Dr. Cash	*80,000*	
Cr. Notes Payable		*80,000*

4.1.3 Interest Payable

Interest payable refers to interest which a company should pay according to the contract, it indicates that an actual cash payment has not been made but since most businesses are automatically supposed to be on the accrual system, the amount of interest to be paid later as evidenced by the amount on the balance sheet is recognized when incurred. Interest increases with the passage of time, once businesses enter into long-term financing agreements, they may promise to pay a certain amount of interest for many years to come. In a balance sheet, only a small portion of this total interest obligation represents "liability" .

To the lender, interest is a revenue, while to the borrower, interest is an expense. The interest payable is a loan.

The interest formula includes three variables that must be considered when computing interest:

Interest = Principal × Interest Rate × Time

Example 4.4

Continuing with Example 4.3, assume that principal was paid off at maturity date, and the interest was accrued per month and paid off per quarter.

(1) On Dec. 31, 2014, Victor Company adjusted its interest expense. The journal entry would be:

Dec. 31, 2014

Dr. Interest Expense	*800*	
Cr. Interest Payable		*800*

Interest Expense = $80,000 × 12% × 1/12 = 800

(2) The interest expense at the end of January, 2015 was recorded as:

Jan. 31, 2015

Dr. Interest Expense 800

Cr. Interest Payable 800

(3) The interest was paid at the end of February, 2015:

Feb. 28, 2015

Dr. Interest Expense 800

Interest Payable 1600

Cr. Cash 2400

4.1.4 Wages Payable

Wages payable is a liability account that shows the amount that the company owes to employees for hours they have already worked, they are usually paid monthly or yearly at a fixed amount. This account directly corresponds to the wages expense account. Wages payable does not go on a company's income statement but on its balance sheet. Wages payable is an accrual account, indicating that the company has incurred wage expenses but has not paid them as of the reporting date. Wages payable and other payable accounts are recorded in the current liabilities section of the balance sheet because they are short-term in nature.

Example 4.5

On Dec. 31, 2014, assume that Jackson Company *accrued $12,000 wages that will be paid off in the next accounting period. To accrue wages payable would be recorded as follows:*

Dr. Wages Expense 12,000

Cr. Wages Payable 12,000

4.1.5 Taxes Payable

A business is responsible for paying taxes to local, state and federal governments, including sales taxes, property taxes, and income taxes. As a matter of fact, taxes payable is more commonly referred to as income taxes payable. The account aims at tracking how much the company still owes for the year on its tax bill. Income taxes payable is a balance sheet account. More specifically, income taxes payable is a current liability.

To exactly account for recording the payable, debit the "income tax expense" account and credit the "income tax payable" account. This will increase an income statement account "income tax expense" and increase the current liability "income tax payable". When paying the taxes, debit

"income tax payable" and credit "cash". This decreases the current liability because the current liability is now paid and decreases "cash" because the businesses use cash to pay off the liability.

Example 4.6

Assume that JDK Company total March income before tax was $68,550 and the income tax rate is 25% (federal and state income tax rate). The income tax for the entry was:

Dr. Income Tax Expense 17,137.50

Cr. Income Tax Payable 17,137.50

When the company paid off the tax, the entry would be recorded as:

Dr. Income Tax Payable 17,137.50

Cr. Cash 17,137.50

Section 2 Non-current Liabilities

Non-current liabilities are a business's long-term financial obligations that are not due within the present accounting year, mortgages payable, long-term leases, long-term notes payable, and bonds payable are a few examples of long-term liabilities. Any non-current liabilities will be listed on the company's balance sheet.

4.2.1 Long-term Notes Payable

Long-term notes payable is a loan or other form of debt which is to be paid off more than one year into the future. A long-term notes payable typically requires periodic interest payments. You must make adjusting entries in your accounting records monthly to account for the accruing interest that you have yet to pay. This keeps your records current to show how much interest you owe.

Example 4.7

On January 1, 2012, Jackson Company purchased a machine from its supplier. The company issued a three-year promissory note at 12% annual interest rate with its principal of $500,000. The interest was required to be paid semi-annually.

(1) Purchased a machine:

Dr. Machine 500,000

Cr. Notes Payable 500,000

(2) Accruing interest expenses on Jan. 31, 2012:

Dr. Interest Expense 5,000

Cr. Interest Payable 5,000

Accruing interest expenses is the same at the end of each month.

(3) The interest was paid every six months. (on June 30 and December 31)

Dr. Interest Payable 30,000

Cr. Cash 30,000

(4) The principal was paid off at the maturity date.

Dr. Notes Payable—Principal 500,000

Cr. Cash 500,000

4.2.2 Bonds payable

When a corporation needs to raise a large sum of long-term capital, it generally sells additional shares of capital stock or issues bonds payable. Bonds usually involve the borrowing of a large sum of money, called principal. Bonds payable is a security which represents money borrowed from the investor (the lender) by the issuer (the borrower). The borrower promises to repay a principal amount at some pre-determined future date as well as a requirement to pay interest on that principal periodically throughout the year, which may be due quarterly, semi-annually or annually, depending on the bonds payable agreement. Bonds are typically issued in large numbers at once to a variety of lenders or investors. The investors have the option to sell their bonds to another investor prior to the bonds' maturity.

● **Types of Bonds**

There are many different types of bonds payable, but the most common types issued today are registered bonds which are issued in the name of a specific owner. Other types of bonds payable are coupon bonds (unregistered bonds), bearer bonds, secured bonds, serial bonds, and debenture bonds or unsecured bonds.

Coupon bonds (unregistered bonds) mean issuers have no record of current bondholders but should pay interest to anyone who can show evidence of ownership, bearer bonds require the bondholder, also called the bearer, to go to a bank or broker with the bond or coupons attached to the bond to receive the interest and principal payments, secured bonds require collateral from the borrowing company to be pledged to the bondholder, serial bonds are issued in groups and mature at different dates, debenture bonds or unsecured bonds depend only on the good name and financial

stability of the issuing company for repayment of principal and interest amounts.

● **Accounting for Issuing Bonds**

The face value of a bond is usually $1,000 or multiples of $1,000. The face value of a bond and its face interest rate is fixed. However, bonds are bought and sold by investors in market every day. A company has no control over the market interest rate. When issuing bonds, there is inevitably a difference in the market rate of interest and the face rate of interest in the issuing date. If the issuing price is lower than the face value, the bonds are issued at a discount. If the the issuing price is higher than the face value, the bonds are issued at a premium. If the issuing price is just equal to the face value, they are issued at par.

► Bonds issued at face value

Example 4.8

To illustrate the sale of bonds at face value, assume Jackson Company issued $200,000 face value of 12%, ten years bonds on January 1, 2013. Interest was to be paid semi-annually. The bond contract obligates Jackson Company to make the following payments:

Principal: $200,000 due in ten years (after 20 six-months periods)

Interest: Interest = $200,000 × 12% × 6/12 = 12,000

$12,000 due at the end of each six-months periods, for ten years.

The entry to record the issuance at par and interest payment would be:

(1) To record sale of bonds at face value:

Dr. Cash	*200,000*	
Cr. Bonds Payable		*200,000*

(2) To accrued semiannual interest:

Dr. Bond Interest Expense	*12,000*	
Cr. Interest Payable		*12,000*

(3) Paid interest at the end of every six months:

Dr. Interest Payable	*12,000*	
Cr. Cash		*12,000*

(4) To record the redemption of bonds at maturity date:

Dr. Bonds Payable	*200,000*	
Cr. Cash		*200,000*

► Bonds issued at a discount

Example 4.9

Jackson Company issued $200,000 face value of 12%, ten-years bonds on January 1, 2013.

The market interest rate is 18% when the bonds are issued.

◆ *Analysis:*

The present value of the 18%, ten-years bonds may be analyzed as follows:

① The present value of $200,000 that due in ten years, at 18% compounded semiannually is $35,680 [= $200,000 × (P/F, 9%, 20) = $200,000 × 0.1784 = $35,680].

② The Present value of 20 semiannual interest payments of $12,000 at 18% compounded semiannually is $109,542 [= $12,000 × (P/A, 9%, 20) = $12,000 × 9.1285 = $109,542].

③ Total present value of the bonds is $145,222 = $35,680 + $109,542.

(1) On Jan. 1, 2013, Jackson Company received $145,222 in cash, and the entry to record the issuance of bonds at a discount value would be:

Dr. Cash	*145,222*	
Discount on Bonds Payable	*54,778*	
Cr. Bonds Payable		*200,000*

(2) To record payment of bond interest and amortization of bond discount on the July 1, 2013:

The straight-line method is provided for amortization in equal periodic amounts. The amount is determined as follows:

Bond Discount Amortization = Bond Discount / Number of Interest Periods

Bond Premium Amortization = Bond Premium / Number of Interest Periods

Dr. Bond Interest Expense	*14,738.90*	
Cr. Discount on Bonds Payable		*2,738.90($54,778 ÷ 20)*
Cash		*12,000*

(3) To record accrued bond interest and amortization of bond discount on Dec. 31, 2013 would be:

Dr. Bond Interest Expense	*14,738.90*	
Cr. Discount on Bonds Payable		*2,738.90*
Bond Interest Payable		*12,000*

(4) On the first day of the next accounting year, the entry to record the payment of bond interest would be:

Dr. Bond Interest Payable	*12,000*	
Cr. Cash		*12,000*

(5) The entry to record the redemption of bonds at maturity date would be:

Dr. Bonds Payable	*200,000*	
Cr. Cash		*200,000*

►Bonds issued at a premium

Example 4.10

Jackson Company issued $200,000 face value of 12%, ten-year bonds on January 1, 2013. The market interest rate is 10% when the bonds are issued.

◆ *Analysis:*

The present value of the 10%, ten-years bonds may be analyzed as follows:

① The present value of $200,000 due in ten years, at 10% compounded semiannually is $75,380 [= $200,000 × (P/F, 5%, 20) = $200,000 × 0.3769 = $75,380].

② The present value of 20 semiannual interest payment of $12,000 at 10% compounded semiannually is $149,546.40 [= $12,000 × (P/A, 5%, 20) = $12,000 × 12.4622 = $149,546.40].

③ Total present value of the bonds is $224,926.40 = $75,380 + $149,546.40.

(1) On Jan. 1, 2013, Jackson Company received $224,926.40 in cash, the entry to record the issuance of bonds at a premium value would be:

Dr. Cash	*224,926.40*		
Cr. Bonds Payable		*200,000*	
Premium on Bonds Payable		*24,926.40*	

(2) To record the payment of bond interest and amortization of bond premium on July 1, 2013: (use straight-line method amortization of premium)

Dr. Bond Interest Expense	*10,753.68*		
Premium on Bonds Payable	*1,246.32*		*($24,926.40 ÷ 20)*
Cr. Cash		*12,000*	

(3) The entry to record accrued bond interest and amortization of bond premium on Dec. 31, 2013 would be:

Dr. Bond Interest Expense	*10,753.68*	
Premium on Bonds Payable	*1,246.32*	
Cr. Bond Interest Payable		*12,000*

(4) On the first day of the next accounting year, the entry to record the payment of bond interest would be:

Dr. Bond Interest Payable	*12,000*	
Cr. Cash		*12,000*

(5) The entry to record the redemption of bonds at maturity date would be:

Dr. Bonds Payable *200,000*

Cr. Cash *200,000*

Special Terms and Useful Expressions

go bankrupt 破产	federal 联邦的
obligation 债务，义务	lease 租赁，租契
invoice 发票	mortgages payable 应付抵押
account payable 应付账款	registered bonds 记名债券
notes payable 应付票据	coupon bonds 附息债券
bonds payable 应付债券	bearer bonds 无记名债券
long-term loans 长期贷款	secured bonds 担保债券
unearned revenue 预收收入	serial bonds 序列债券，分批偿还债券
pre-determined 事先确定的	debenture bonds 信用公司债券
incur 招致，引起	broker 经纪人
promissory note 本票，期票	premium 溢价
documentation 文档	inevitable 必然的，不可避免的
remedy 补救，救济	collateral 担保物
variable 变量	face value 票面价值
principal 本金	maturity date 到期日
as of 截至	

Exercises

1. Fill in the blanks according to what you have learned in this chapter.

(1) Liabilities can be classified into current liabilities and ____________.

(2) Non-current liabilities will be paid off over one year or more than ____________.

(3) Liabilities are debts or _______ arising from the past economic transactions or events that required settlement at a future date.

(4) Notes payable refers to obligations in the form of written ________, which usually require the borrower to pay interest.

(5) Long-term notes payable is a__________or other form of debt which is to be paid off more than one year into the future.

(6) Bonds usually involve the borrowing of a large sum of money, called ________.

(7) When paying the taxes, debit _____________ account and credit cash account.

(8) If the issuing price is lower than the face value, the bonds are issued ______. If the the issuing price is_________ than the face value, the bonds are issued at a premium. If the issuing price is just equal to the face value, they are issued _______.

2. Choose the correct answer.

(1) Current Liabilities refer to the obligations that are expected to be paid ( ).

A. from existing current assets B. by creating other current liabilities

C. more than one year D. both A and B

(2) Which of the following items does not belong to the long-term liabilities? ( )

A. Long-term notes payable B. Long-term loans

C. Taxes payable D. Bonds payable

(3) Which of the following items belongs to the liabilities? ( )

A. Cash B. Salaries expense

C. Sales revenue D. Salaries payable

(4) A company purchased $8,000 inventory from the supplier. $5,000 was paid to the supplier, and the rest of the bill was on account. The entry to record this transaction is ( ).

A. Dr. Inventory	8,000	
Cr. Accounts receivable		3,000
Cash		5,000
B. Dr. Accounts Payable	8,000	
Cr. Inventory		3,000
Cash		5,000
C. Dr. Inventory	8,000	
Cr. Accounts Payable		3,000
Cash		5,000
D. Dr. Inventory	8,000	
Cr. Accounts Payable		5,000
Cash		3,000

(5) On August 1, 20×9, A Company loaned $6,000 to JDK Company (investment activity), JDK Company issued a one year term, 8% note. How much of the interest revenue should the Company record on Dec.31, 20×9? ( )

A. $160 B. $200 C. $240 D. $480

(6) When a Company paid off the taxes, the journal entry would be (　　).

A. Dr. Income Tax Expense
　　Cr. Income Tax Payable

B. Dr. Income Tax Payable
　　Cr. Cash

C. Dr. Income Tax Payable
　　Cr. Income Tax Expense

D. Dr. Cash
　　Cr. Income Tax Expense

3. Match the English words in right Column with its Chinese in left Column.

(　) 1. Current Liabilities	a. 到期日
(　) 2. Notes Payable	b. 应交税金
(　) 3. Taxes Payable	c. 预收账款
(　) 4. Premium on Bonds	d. 应付账款
(　) 5. Maturity Date	e. 流动负债
(　) 6. Unearned Revenue	f. 应付债券
(　) 7. Face Value	g. 应付票据
(　) 8. Annual Interest Rate	h. 年利率
(　) 9. Bonds Payable	i. 票面价值
(　) 10. Accounts Payable	j. 债券溢价

4. Case analysis.

(1) A business borrowed $12,000 from local bank on March 1, 2014. The loan was agreed to return in five months, and the annual interest rate was 10%. The principal was paid off at maturity date.

Required: ① Prepare the entry on March 1, 2014.

② Prepare the adjusting entry through March to July.

③ Prepare the entry at maturity date (August 1), assume the business paid the interest expense and principal to local bank.

(2) Assume that Crystal Corporation issued a five year, $30 million bonds at par on Jan. 1, 2013. The coupon rate was 10%. Interest was to be paid semiannually.

Required: Please prepared the following entries：

① to issue bonds at par.

② entries on each Jan.1 and Dec. 31 in five years.

③ entry at maturity date.

Chapter 5

Owner's Equity

Learning Objectives:

By the end of this chapter, the learners are supposed to:

- describe the various types of business organizations
- distinguish common stock from preferred stock
- distinguish paid-in capital from retained earnings
- be familiar with the terms and useful expressions in this chapter

Pre-class Task

In chapter 1, we have learned accounting equation as follows:

Assets = Liabilities + Owner's Equity

The relationship between the accounting elements can be expressed in this simple mathematical form. In this form, assets represent the resources owned or controlled by a business.

The liabilities are the right of the creditors, which represent debts of a business.

Can you explain what is owner's equity? Can you change the accounting elements on both sides of the accounting equation and keep the balance of the equation?

Owner's Equity = ____________________

Introductory Remarks

Owner's equity or shareholder's equity is referred to as the net assets of the business, it also represents the difference between the assets and liabilities. There are three forms of business organizations: sole proprietorships, partnerships and corporations. If a business is owned by one person, the owner's equity is shown as "proprietorship", if a business is owned by two or more people, it is called "partnership", if it is owned by the general public, the owner's equity is called "corporation".

The calculation for owner's equity is assets minus liabilities. Take the following as a good example, if the value of the business assets is $860,000 and the total liabilities are $160,000, then the owner's equity of this business is $700,000. These values are expressed on the balance sheet where assets are on the left and liabilities and owner's equity on the right.

The stockholder's equity section of a corporation's balance sheet includes: paid-in capital and retained earnings. The former is the amount stockholders paid to the corporation in exchange for shares of ownership, including paid-in capital exceeding par value, while the latter refers to earnings that are not paid out as dividends to shareholders, retained earnings represent the accumulated profits, undivided profits, undistributed profits or earned surplus.

Section 1　Paid-in Capital

Companies have several options to finance operations or to raise significant amounts of capital for expansion. The most common is by means of issuing debt (bonds) or by selling equity (stock).

Paid-in capital is an account found on the balance sheet under the owner's equity section. Paid-in capital shows how much money was invested by stock holders. For companies with stock that has a par value, the paid-in capital is the par value of the stock plus the additional paid-in capital. The par value is a certain small value under five dollars to be legal under state law. Additional paid-in capital is just the amount of equity invested by the company in excess of par value. Paid-in capital does not include retained earnings but only the amount that was received by the company in exchange for ownership shares in the company. There are two main types of stock:

common stock and preferred stock.

5.1.1 Common Stock

If a corporation issues only one type of stock, it is known as common stock. Common stock is a form of corporate equity ownership, a type of security, it is also called "voting share" or "ordinary share" in other countries. Common stock represents the basic ownership class of stock for a corporation. Common stockholders are entitled to: 1. attend stockholder's meetings and vote on important business things that require stockholders' approval; 2. share in earnings distributions through receipt of dividends; 3. purchase new shares issued by the company; 4. know what assets remain after a liquidation.

Usually stock has market value, book value or par value. Market value is the price at which the stock can be exchanged on the open market. This amount varies from day to day. The market value of the common stocks of publicly owned corporation must be disclosed in their financial reports. Book value is usually computed only for common stock. It refers to the net assets represented by one share of stock. Therefore, if a corporation issues only common stock, its book value per share is total stockholder's equity divided by the number of shares outstanding. Par value is also called stated value, which represents the legal capital per share. Common stock may be issued with a par value or with no-par value. Generally, stockholder's equity can not be lower than par value unless there are losses from business operation. The board of directors can not declare a dividend if the dividend will lead to the stockholder's equity falling below the par value of the outstanding shares. So par value may be regarded as minimum guarantee of equity capital existing for the protection of creditors.

When common stock is sold and issued, the common stock account is credited on the par value of the stock. If the stock is sold for more than par value, the excess amount over par is credited to the additional paid-in capital account.

Example 5.1

Assume that Victor Company issued 50,000 shares of $4 par common stock for $8 per share on Jan. 1, 2014. The entry to record the common stock issuance would be:

Dr. Cash	*400,000*	
Cr. Common Stock		*200,000*
Additional Paid-in Capital, Common Stock		*200,000*

Example 5.2

Assume that JDK Company set a $10 stated value on its no-par stock, and that 30,000 shares of no-par common stock were issued for $15 per share. The entry to record this transaction would be:

Dr. Cash	*450,000*	
Cr. Common Stock		*300,000*
Additional Paid-in Capital, Common Stock		*150,000*

5.1.2 Preferred Stock

Preferred stock is stock that gives its owner certain preferences or rights superior to those of common stock, it has the following features: 1. preference as to dividends at a stated rate or amount; 2. preference as to assets in event of liquidation of the corporation; 3. redeemable (callable) at the option of the corporation, and 4. absence of voting rights.

There are many types of preferred stock and occasionally the types can be mixed. Cumulative preferred stock, callable preferred stock and convertible preferred stock are the most common types. Most preferred stock issued today is cumulative. Cumulative preferred stock refers to preferred stock on which any unpaid dividends accumulate from year to year for future payment. The owners of preferred stock normally are entitled to possess a certain amount of dividends before those of common stock can. The dividend preference is usually stated as a dollar amount per share or as a percentage of par value. For example, preferred stock might be described as “$120 par, $12 preferred stock”, or “$120 par, 10% preferred stock”.

Preferred stockholders have preference over common stock holders in dividend distribution as well as in terms of capital invested.

5.1.3 Difference between Common Stock and Preferred Stock

There are two major differences between preferred and common stocks:

Firstly, preferred stockholders have a greater claim to a company’s assets and earnings when the company has excess cash and decides to distribute money in the form of dividends to its investors. In other words, if both types of stock exist, common stock holders cannot be paid dividends until all preferred stock dividends are paid in full. On the other hand, in the case of bankruptcy, common stock investors receive any remaining funds after bondholders, creditors (including employees), and preferred stock holders are paid. Therefore, common stock investors

often receive nothing after a bankruptcy.

Secondly, the dividends of preferred stocks are generally greater than those of common stocks. When you buy a preferred stock, you will have an idea of the time for a dividend because they are paid at regular intervals. This is not necessarily the case for a common stock, as the company's board of directors will decide whether or not to pay out a dividend. That is why preferred stocks typically don't fluctuate as often as a company's common stocks.

Example 5.3

Assume that JDK Company issued 20,000 shares of $15 par preferred stock for $25 per share. The entry to record the preferred stock issuance would be:

Dr. Cash	*500,000*	
Cr. Preferred Stock		*300,000*
Additional Paid-in Capital, Preferred Stock		*200,000*

Section 2 Retained Earnings

Legal capital and additional paid-in capital collectively represent the contributed capital of the corporation. Retained earnings are the other main source of capital, which represent all the profits a company has earned but not paid out to shareholders in the form of dividends. They are retained and reinvested into the company, allowing it to grow, change directions or meet emergency costs. The stockholders will benefit if these profits are spent in their interests because the stocks of the company become more valuable. But if the retained earnings category is disproportionately large, and especially if it is held in cash, the stockholders may ask for a dividend to be paid. Dividend payments reduce the retained earnings on the balance sheet. If cumulative losses exceed cumulative income over a company's life, a debit balance in retained earnings will appear, in such a case, the company is said to have a deficit in retained earnings.

While retained earnings is expressed as a dollar amount, it is not held in a cash account. Instead, this figure represents the amount of assets that a company has purchased or operating costs it has paid out of its profits, rather than out of its earnings from selling its own stock. Retained earnings account is a critical measure of a company's value and stability, since it tells an investor both how much a company is likely to pay in dividends, and how profitable it has been over time.

Dividends

The key factor affecting retained earnings is the distributions to the stockholders of a corporation, which commonly take the form of dividend .The word “dividend” comes from the Latin word “dividendum” (“thing to be divided”). Dividends are distributions of retained earnings to stockholders generally in the form of cash, it is a way of rewarding the stockholders for their investment when the corporation has earned a profit. When the board of directors declares payment of dividends, the company becomes legally liable to pay the dividends. If a company has sufficient cash, a distribution of profits may be made to stockholders. Dividends decrease both total assets and stockholder’s equity. The amount of retained earnings at any balance sheet date shows the accumulated earnings of the company minus any losses and dividends ever since the date of incorporation.

Dividends mainly take four forms: cash, property, promissory note and stock, among which cash dividends and stock dividends are the most common.

● **Cash Dividend**

Cash dividends are the most common form of payment and are paid out in currency, usually via electronic funds transfer or a printed paper check. If a company wants to pay cash dividends, it must have retained earnings and adequate cash. Three important dates related to dividends are the declaration date, the record date and the payment date. Dividends must be approved by the board of directors of the company before they can be paid.

When declared, cash dividends decrease retained earnings and become a current liability. As a result, they are not classified as an expense, but rather a deduction of retained earnings. Dividends paid does not show up on an income statement but does appear on the balance sheet.

The entry to record declaration of cash dividend is as follows:

Dr. Dividends / Retained Earnings	x x x	
Cr. Dividends Payable		x x x

The entry to record the payment of cash dividend is as follows:

Dr. Dividends Payable	x x x	
Cr. Cash		x x x

Example 5.4

Assume that on Dec. 31, 2014, the board of directors of Victor Company declared $10,000 to be distributed to stockholders, the entry to record the declaration would be:

Dr. Dividends *10,000*

Cr. Dividends Payable *10,000*

Those stockholders who own the stock on the date of record will receive the dividend when it is paid.

Suppose at the beginning of the next accounting period, the dividend was paid actually. The entry to record the payment would be:

Dr. Dividends Payable *10,000*

Cr. Cash *10,000*

● **Stock Dividend**

Stock or scrip dividends are those paid out in the form of additional stock shares of the issuing corporation, or another corporation (such as its subsidiary corporation). They are usually issued in proportion to shares owned (for example, for every 100 shares of stock owned, a 5% stock dividend will yield 5 extra shares).

A stock dividend leads to a decrease in retained earnings and an increase in paid-in capital. A stock dividend causes no change in assets or in total stockholder's equity. Each stockholder receives additional shares, but his or her percentage ownership in the corporation is no larger than before.

In USA, a distribution of stock that is 20%-25% or less is called a small stock dividend, 25% or more is called a split. A stock dividend is a small stock split. A small stock dividend is less likely to affect the price of the company's stock significantly. Hence, to record a stock dividend, Retained Earnings is debited with the fair value of the additional shares issued, with the credit being to the paid in capital in excess of par account.

Example 5.5

Assume that Jackson Company declared a 10% stock dividend on a date when it had 40,000 shares of $8 par value common stock. The current fair market value of its stock is $12 per share. The entry to record this transaction at the declaration and payment date would be:

The date of declaration:

Dr. Retained Earnings *480,000*

Cr. Common Stock to Be Distributed *320,000*

Paid in Capital in Excess of Par *160,000*

The date of payment:

Dr. Common Stock to Be Distributed *320,000*

Cr. Common Stock *320,000*

Special Terms and Useful Expressions

sole proprietorship 独资企业	outstanding shares 流通股；已发行股票
partnership 合资企业	redeemable (callable) 可赎回的
paid-in capital 缴入资本	cumulative preferred stock 累积优先股
retained earnings 留存收益	callable preferred stock 可赎回优先股
par value 票面价值	convertible preferred stock 可转换优先股
dividend 股票利息	fluctuate 波动
surplus 盈余	deficit 赤字；亏损；亏空
common stock 普通股	yield 产量，产生利益
preferred stock 优先股	split 拆分

Exercises

1. Fill in the blanks according to what you have learned in this chapter.

(1) __________ is referred to as the net assets of the business, it also represents the difference between the assets and ______________.

(2) There are three forms of business organizations: solo proprietorships, ________________ and________________.

(3) The two most basic sources of owner's equity are: paid-in capital and _________.

(4) Retained earnings are past earnings not distributed to ____________.

(5) Paid-in capital is an account found on the balance sheet under the ______section.

(6) If the stock is sold for more than par value, the excess amount over par is credited to the account.

(7) Dividends are distributions of ____________ to stockholders generally in the form of cash.

(8) Dividends distribution decreases both total assets and ___________.

(9) Dividends paid does not show up on an income statement but does appear on the ___________.

(10) A stock dividend leads to a decrease in retained earnings and an increase in ___________.

2. True or false.

(1) Owner's equity represents the owner's interest in or claim upon a business net assets which is the difference between the assets and liabilities. (   )

(2) Stock must be issued at par value. (   )

(3) Retained earnings account is an asset account. (   )

(4) Cash dividends decrease retained earnings and become a current liability when declared. (   )

(5) Dividends paid does show up on an income statement. (   )

(6) Selling common stock for more than par value results in gain reported on the income statement. (   )

(7) Dividends mainly take four forms: cash, property, promissory note and stock, among which cash dividends and stock dividends are the most common. (   )

(8) Additional paid-in capital is an account found on the balance sheet under the assets section. (   )

3. Match the English words in right Column with its Chinese in left Column.

(　　) 1. sole proprietorship	a. 普通股
(　　) 2. Par value stock	b. 实收资本
(　　) 3. Common stock	c. 股利分配
(　　) 4. Stock dividend	d. 独资企业
(　　) 5. Paid-in capital	e. 应付股利
(　　) 6. Retained earnings	f. 有面值的股票
(　　) 7. Dividend distribution	g. 股票股利
(　　) 8. Dividend payable	h. 留存收益

4. Choose the correct answer.

(1) Which of the following item belongs to the Owner's Equity? (   )

A. Dividend payable　　B. Unearned revenue

C. Retained earnings　　D. Accounts receivable

(2) The owner's equity section of balance sheet may include (   ).

A. Common stock　　B. Preferred stock

C. Additional paid-in capital　　D. All of the above

(3) Suppose that a business has issued 15,000 shares of $20 par common stock and holds 4,000 of these shares as treasury stock. If the business declared a $1 per share cash dividend, what amount will be recorded as cash dividends? (   )

A. $4,000　　B. $11,000

C. $15,000　　D. $300,000

(4) Preferred stock may have priority over common stock except (　　).

A. dividends at a stated rate or amount

B. assets in the event of liquidation

C. redeemable at the option

D. voting rights

(5) Smith's Company issued 10,000 shares of $10 par value common stock at $12 per share. The entry to record this transaction is: (　　)

A. Dr. Cash	120,000	
Cr. Common Stock		100,000
Retained Earnings		20,000
B. Dr. Cash	120,000	
Cr. Common Stock		20,000
Additional Paid-in Capital, Common Stock		100,000
C. Dr. Cash	120,000	
Cr. Common Stock		100,000
Additional Paid-in Capital, Common Stock		20,000
D. Dr. Cash	120,000	
Cr. Common Stock		120,000

(6) The retained earnings account is (　　).

A. an asset account

B. reported as an expense in the Income Statement

C. the portion of net income kept in a corporation

D. closed to common stock

(7) On payment day, payment of the cash dividend is (　　).

A. recorded by debiting retained earnings, crediting dividends payable

B. recorded by debiting dividends payable, crediting cash

C. recorded by debiting dividends payable, crediting common stock

D. recorded by debiting retained earnings, crediting common stock

5. Case analysis.

(1) Please journalize the transactions below.

① Jan. 1, suppose that Jackson Company sold 10,000 shares of $10 par value common stock at par for cash.

② Apr. 1, if Jackson issues 10,000 shares of $1 par value stock for $10 per share.

③ Dec. 1, assume that Jackson Company's board of directors set a $10 stated value on its no par stock. They issued 10,000 shares of no par common stock with a $10 par value for $12 per share.

(2) Suppose A Company declared a 10% stock dividend on a date when it had 30 million shares outstanding of $1 par common stock that was $8 per share.

Required: please make the entries to record this transaction at the declaration date and the payment date.

(3) Jan. 1, 2014, JDK Company had 200,000 shares of no-par value common stock outstanding.

① Apr. 1, declared a cash dividend of 50 cents per share.

② Apr. 30, paid cash dividend.

③ Aug. 1, declared 10% stock dividend. The market price of the stock on this date was $18 per share.

Required: make journal entries to record the transactions.

Chapter 6

Revenues, Expenses and Profit

Learning Objectives:

By the end of this chapter, the learners are supposed to:

- have a good command of the features of revenues, expenses and profit
- learn the accounting treatment for revenues, expenses and profit
- be familiar with the terms and useful expressions in this chapter

Pre-class Task

A car dealership is a business that sells new cars and/or used cars at the retail price, based on a dealership contract with an automaker or its sales subsidiary. Its business includes: sells automotive vehicles; after-sales service (provides maintenance services for cars); sells spare automobile parts and survey. It is also called “4S” shop.



1. Do you know what the revenues and expenses of a car dealership are?
2. What is the cost of a car dealership?
3. Do you know how to calculate the profit to an entity?

Introductory Remarks

In business, revenue or turnover is income that a company receives from its normal business activities, usually from the sale of goods and services to customers. In many countries and states, revenue is referred to as turnover. In addition, revenue is often referred to as the “top line” in accounting due to its position on the income statement at the very top.

Expenses are subtracted from revenues in the income statement. Cost of goods sold is a very important kind of expense. Expenses usually consist of the cost of employees’ salaries, utilities, rent, and the gradual depreciation of fixed assets. As a matter of fact, these expenses are spent for the purpose of attracting and serving customers to earn revenues for the business.

Profit, often called net income, refers to the increase in owner’s equity due to profitable operations of a business. If revenues exceed expenses, net income incurs, if expenses exceed revenues, net loss is inevitable.

These three accounting elements are temporary accounts since they are opened at the beginning of an accounting period and closed at the end of the period, they all belong to owner’s equity in the accounting equation.

Section 1 Revenues

As is described in chapter 1, revenues refer to the gross inflows of economic benefits resulting from selling goods, providing services, transferring assets or other everyday activities which constitute the entity’s ongoing major or central operations. They are defined as “increase in economic resources, either through increases to assets or reductions to liabilities”.

Although sometimes “income” is used as a synonym for “revenues”, they are somewhat different, revenues equal the prices of goods and service over a specific period of time, while

income is related to changes in retained earnings, “revenues” are gross and “income” is net. In the income statement, there will be no misunderstanding between them because “revenues” appear at the top while “income” at the bottom.

There are various terms for different kinds of revenues, for instance, the revenues earned by a real estate broker are called sale commissions earned or commission revenue, the revenues of a business selling merchandise instead of services are called sales, in the professional practice of lawyers, physicians, dentists and CPAs, revenues are also usually called fees earned. Another type of revenue is interest earned, which is earned as interest on bank deposits, notes receivable, bonds or other securities.

6.1.1 Revenue Recognition

According to the revenue realization principle, revenues of a business are recognized when goods are delivered or services are rendered to customers. In other words, cash can be received before or after goods or services are delivered, thus revenues concerned are recognized in two types of accounts: accrued revenue and deferred revenue, the former means revenues which have been earned by the business but has not yet been paid to the business. For instance, interest revenue of a bank, which is earned daily but paid yearly. The latter refers to recognizing revenues after cash is received.

In this case, the money received is not necessarily the revenues but sometimes a liability called unearned revenue, like rent or insurance on property which are often paid in advance. And there is accounts receivable which represents sales made on credit.

In addition, four revenue transactions are recognized according to the revenues realization principle:

1. Revenues from selling products are recognized at the date of sale, which is often regarded as the date of delivery.

2. Revenues from providing services are recognized when services are completed and are billable.

3. Revenues from permitting others to use company’s assets such as interest, rent, and royalties are recognized as time passes or as assets are used.

4. Revenues from disposing of assets other than inventory are recognized at the date of sale.

6.1.2 Accounting for Revenues

Two common accounting methods, cash basis accounting and accrual basis accounting, do

not use the same process to measure revenues. Corporations that offer shares for sale to the public are usually required by law to report revenues based on Generally Accepted Accounting Principles or International Financial Reporting Standards.

In a double-entry bookkeeping system, revenues accounts are general ledger accounts that are summarized periodically under the heading revenue or revenues on an income statement. Revenues account names describe the type of revenues, such as “repair service revenue”, “rent revenue earned” or “sales”.

● **Accounting for Revenue from Sales of Goods**

Revenues can be recorded when goods are delivered or title to goods is transferred to the buyer, thus earning is realized.

Accounting for revenue from sales of goods can be expressed in the following equation :

Sales Revenue = Price per Unit × Amount of Units Sold

For example, if we were selling toy cups at £1.75, and we sold 2,800 units, £1.75 × 2,800 units = £4,900, thus £4,900 is our sales revenue.

Example 6.1

Assume that Victor Company sold merchandise to its customer on Mar. 15, 2014, and collected the entire sales $20,000 of merchandise in cash. The entry to record this transaction would be:

Dr. Cash 20,000

Cr. Sales Revenue 20,000

Example 6.2

A Company provided consulting service for its customers. The company’s consultant received $3,000 of cash payment. The entry would be:

Dr. Cash 3,000

Cr. Consulting Revenue 3,000

● **Accounting for Receivables**

Every businessman wants to collect all of his receivables accounts. This means that every person should pay off all the debts owed to the business. However, this is not a common occurrence. On a company’s balance sheet, the company will normally show its accounts receivable as net receivables. The net receivables is the amount that the company actually believes it will collect. Therefore, using the company’s accounts receivable, anyone can calculate gross receivables.

Example 6.3

On April 25, 2014, ABC Company sold $30,000 of products to a new retailer on account. The

entry to record this transaction would be:

On April 25, 2014

Dr. Accounts Receivable	*30,000*	
Cr. Sales Revenue		*30,000*

● **Accounting for Credit Card Sales**

Big supermarkets usually issue their own credit cards. Sales from such credit cards constitute a large portion of their revenues. For a company, accepting credit cards can increase trade and sales, avoid losses and receive payment more quickly. Of course, when credit card sales are made, the company must pay the credit card company a fee for the service it provides. Moreover, accounting for credit card sales can be a bit more complicated than accounting for cash sales. The method of marking down sales paid for by credit card charges according to the type of credit card used. Bank-issued cards are accounted for differently than store-issued cards, while third-party credit cards issued by independent credit card companies require yet another accounting method. Fortunately, there are rules covering all credit card sales, and knowing how to account for each will keep your account.

Example 6.4

Suppose that Jackson Company had credit card sales of $15,000, and the bank service charge was 2% of net credit card sales. The entry to record the sales and credit card service fee would be:

Dr. Cash	*14,700*	
Credit Card Service Charge	*300*	
Cr. Sales		*15,000*

● **Accounting for Discounts**

Discounts are incentives to purchase products and reward customers to pay their accounts quickly. There are two kinds of discounts: trade discount and cash (or sales) discount. A cash discount may be shown as discount is 2/10, n/30, which means if payment in full is received within the first 10 days of the month, a 2 percent discount will be given, net amount due in 30 days. The discount and cash received should equal the gross purchase price.

Example 6.5

Let's take the information of Example 6.3, suppose ABC Company sold $30,000 of products to a new retailer on account. The company gave its new retailer a cash discount of 2/10, n/30.

◆ *If the payment was received within 10 days. The entry to record this cash discount would be:*

Dr. Cash	*29,400*	
Sales Discounts	*600*	
Cr. Accounts Receivable		*30,000*

◆ *If the payment was received after discount period. The entry was recorded as follows:*

Dr. Cash	*30,000*	
Cr. Accounts Receivable		*30,000*

Section 2 Expenses

Expenses are the decrease in owner's equity caused by the company's basic operations. Expenses consist of the cost of employees' salaries, rent, advertising, utilities and the gradual depreciation of such assets as building, automobiles and office equipment. All these expenses are necessary to earn revenues through attracting and serving customers, thus expenses are often referred to as "cost of doing business". The more the expenses, the more the owner's equity is decreased.

6.2.1 Expense Recognition

According to the matching principle, in accrual accounting, expenses should be recorded during the period in which they are incurred, regardless of when the transfer of cash occurs. While in cash basis accounting, expenses should be recognized when the cash is paid, regardless of when the expenses are actually incurred. The matching principle also requires that we should match related expenses with the revenues when recognizing revenue. Expense recognition affects reduction in the owner's equity and moves assets from the balance sheet to the income statement as they are expended.

6.2.2 Accounting for Expenses

Accounting for expenses gives accountants more headaches than any other type of transaction. Among the seven most frequently misstated transactions and accounts, expenses ranked second only after revenues.

In the basic form of an income statement, expenses are classified under operating expenses covering all the expenses incurred in the operations of a business. Nevertheless, in a classified income statement, expenses are classified under different categories.

● **Cost of Goods Sold**

In financial accounting, cost of goods sold (COGS) includes the direct costs resulting from the production of the goods sold by a company. This amount includes the materials cost used in creating the goods along with the direct labor costs used to produce the goods. It excludes indirect expenses such as distribution costs and sales force costs. COGS appears on the income statement and can be deducted from revenues to calculate a company's gross margin.

● **Selling Expenses**

Selling expenses usually refer to all the expenses associated with the company's sales, including sales salaries expense, advertising expense, delivery wage expense, shipping supplies expense and travel expense.

● **General and Administrative Expenses**

General and administrative expenses are the expenses incurred by a business as a result of carrying out the day-to-day operations. They mainly consist of office salaries, rent cost, research and development expense, insurance expense, training expense, depreciation expense, bad debt expense and so on. To calculate general and administrative expenses, accountants need to refer to the general ledger account records to confirm the occurrence and costs of all the general and administrative expenses transactions.

Example 6.6

Let's take the information of Example 6.1, assume that Victor Company sold merchandise again on Mar. 15, 2014. $50,000 of the payment has not been received. The total costs of the merchandise for two sales in March were $29,000.

► *The entry to record this sales would be:*

Dr. Accounts Receivable	*50,000*	
Cr. Sales Revenue		*50,000*

► *The entry to record the cost of goods sold would be:*

Dr. Cost of Goods Sold	*29,000*	
Cr. Inventory		*29,000*

Example 6.7

Victor Company paid $3,000 of advertising fee to a local newspaper. Paid $1,000 of office telephone fee to communication company. The entry was:

Dr. Advertising Expense	*3,000*	
Telephone Expense	*1,000*	

Cr. Cash 4,000

Example 6.8

On July 1, 2014, Victor Company paid $5,000 for a year insurance.

► *On July 1, 2014, the entry to record the purchase of insurance was:*

Dr. Prepaid Insurance 5,000

Cr. Cash 5,000

► *On Dec.31, 2014, the entry to record the insurance expense for this year was:*

Dr. Insurance Expense 2,500

Cr. Prepaid Insurance 2,500

Example 6.9

Suppose Victor Company paid $15,000 of salaries for its salesmen. The entry to record this transaction would be:

Dr. Sales Salaries Expense 15,000

Cr. Cash 15,000

Section 3 Profit

Profit, which is the opposite of loss, means the positive gain from an investment or business operation after subtracting for all expenses. It is regarded as an important measure of how profitable the company is over a period of time. Profit is shown in reduction in liabilities, increase in assets, and/ or increase in owner's equity. It is also called earning, gain or income. Revenue is a "gross" concept, while profit is a "net" concept.

6.3.1 Special Profit Items

● **Net Income**

If revenues exceed expenses, the result is called net income or profit, which can be shown in the equation: Net Income= Revenues−Expenses. On the contrary, if expenses exceed revenues, the difference is called net loss. Net income (or net loss) is sometimes referred to as "the bottom line" since it is commonly listed at the bottom of the income statement. Net income is the net increase in owner's equity.

● **Gross Profit**

Gross profit is a company's sales revenue after selling a product or service and deducting the cost of goods sold. It is also called "gross margin" or "gross income".

When analyzing a company, gross profit is very important because it indicates how efficiently management uses labor and supplies in the production process. Gross profit varies significantly from industry to industry.

Gross profit ratio can be expressed as a percentage of the sales amount, it is calculated as follows:

Gross Profit Ratio = Gross Profit ÷ Net Revenue

Companies need healthy gross profit to cover operating expenses, and to generate operating income, and then net income.

6.3.2 Accounting for Profit

● **Accounting for Profit from Operations**

At the end of an accounting period, profit is obtained when revenues are recognized and expenses are matched. Accounting for profit is usually through a primary income statement and a classified income statement. A primary income statement refers to the simplified "single-step" income statement which groups all of the revenues and expenses, except the income tax expense. While a classified income statement is a "multi-step" one which is broken down into the revenue from sales and services on the positive side and the cost of goods sold, operational expenses, and other expenses on the negative side, which is more complex.

● **Accounting for Other Revenues and Expenses**

Apart from reporting profits from major operations, an accountant should also report other revenues and expenses, this allows the reader to see the profitability of the business more clearly, which include:

Other revenues or gains refer to those from other business activities (e.g., rent, income from patents, goodwill). It also includes unusual gains that are either unusual or infrequent, but not both (e.g., gain from sale of securities or gain from disposal of fixed assets).

Other expenses or losses are those which are not related to primary business operations (e.g., foreign exchange loss).

Finance costs are costs of borrowing from various creditors (e.g., interest expense, bank charges).

Income tax expense is the sum of the amount of tax payable to tax authorities in the current reporting period (current tax liabilities/ tax payable) and the amount of deferred tax liabilities (or assets).

Example 6.10

Profit (net income) reported in the single-step income statement as shown in ***Exhibit 6-1.*** *Profit (net income) reported in the multi-step income statement will be shown in* ***Exhibit 7-9,*** *in Chapter 7*.

Exhibit 6-1

Victor Company

Income Statement for the Year Ended December 31, 2014

Revenues	
Sales revenue	$70,000
Dividends revenue	12,000
Total revenues	$82,000
Costs and expenses	
Cost of goods sold	$29,000
Advertising expense	3,000
Telephone expense	1,000
Interest expense	800
Sales salaries expense	15,000
Insurance expense	2,500
Depreciation expense	1,900
Amortization expense	2,000
Bad debt expense	500
Income tax expense (15%)	$3,945
Total costs & expenses	$59,645
Net income	$22,355

Special Terms and Useful Expressions

dealership 代理商	accrued revenue 应计收入
retail 零售	deferred revenue 递延收入
turnover 营业额，成交量	on credit 赊账
subtract 减去	dispose 处理，处置

utility 公用事业
net income 净收入
gross inflow 毛收入
exceed 超过
constitute 构成
synonym 同义词
Sale Commissions Earned 销售佣金
CPA（Certified Public Accountant）注册会计师
Interest Earned 利息收入
render 得到，给予
cash basis accounting 收付实现制会计
title 产权，标题
third-party 第三方，丙方
incentive 刺激
variable costs 可变成本
general and administrative expenses 总务及管理费用
gross profit 毛利，总利润
"single-step" income statement 单步式损益表
"multi-step" income statement 多步式损益表

Exercises

1. Fill in the blanks according to what you have learned in this chapter.

(1) Revenues are income that a company receives from its normal business activities, usually from the ________and services to customers.

(2) If revenues exceed expenses, net income occurs, otherwise ________ occurs.

(3) Revenues can increase assets, while ________ liabilities.

(4) There are two kinds of discounts: trade discount and _________.

(5) A cash discount 2/10, 1/15, n/30 means a ________ discount can be taken if the payment is paid during the first 10 days of the month, or a ________ discount can be taken if the payment is paid during the next five days of the month, and net amount due in_________days.

(6) Cost of goods sold shows on the income statement, and COGS can be deducted from to calculate a company's gross margin.

(7) In financial accounting,________includes the materials cost used in creating the goods along with the direct labor costs used to produce the good.

(8) Gross profit is a company's sales revenue after selling a product or service and deducting the ________.

2. True or false.

(1) Revenues are shown at the top of an income statement. (　　)

(2) Revenues come from ordinary activities of enterprises, it can decrease the owner's equity. (   )

(3) Temporary accounts are closed at the end of the accounting period. (   )

(4) In the income statement, revenues are shown at the top while income appears at the bottom. (   )

(5) Accrued revenue is revenue which has been earned by the business but has not yet been paid to the business. (   )

(6) Revenues can be recorded when goods are delivered or title to goods is transferred to the buyer, thus earning is realized. (   )

(7) All increases in owner's equity arise from revenue. (   )

(8) When credit card sales are made, the company must pay the credit card company a fee for the service it provides. (   )

(9) Discounts are incentives to purchase products and reward customers for paying quickly. (   )

(10) Expenses are the inflow of economic resources that happens in ordinary activities of enterprises. It can decrease owner's equity. (   )

3. Choose the correct answer.

(1) Which of the following items does not belong to temporary accounts? (   )

A. Sales revenue B. Selling expense

C. Retained earnings D. Investment revenue

(2) Which of the following items does not belong to revenue? (   )

A. Unearned revenue B. Interest revenue

C. Rent revenue D. Investment revenue

(3) Which of the following items does not belong to selling expenses? (   )

A. Sales salaries expense B. Depreciation expense

C. Advertising expense D. Delivery wages expense

(4) A Company paid $12,000 to rent an office from Jan. 1, 2014 to July 1, 2015. How much of the office rental should be booked as cost for 2014? (   )

A. $4,000 B. $8,000

C. $12,000 D. $18,000

(5) Which of the following items does not belong to cost of goods sold? (   )

A. Direct material B. The cost of products

C. Direct labor D. Finance costs

(6) Revenues can increase (　　).

A. assets　　B. liabilities

C. owner's equity　　D. both A and C

(7) Which of the following items does not belong to an account? (　　)

A. Sales revenue　　B. Cost of goods sold

C. Selling expense　　D. Net income

(8) A company owns total assets $500,000, total liabilities $100,000, after it has paid $50,000 for purchasing a car and $1,000 for car insurance, what is the total assets of the company? (　　)

A. $449,000　　B. $450,000

C. $499,000　　D. $500,000

(9) A company sold $450,000 products, the cost of goods sold was $200,000, and the operating expenses are $120,000. How much is the gross margin? (　　)

A. $130,000　　B. $250,000

C. $330,000　　D. $450,000

(10) A company sold $450,000 products, the cost of goods sold was $200,000, and the operating expenses are $120,000. How much is the net income? (　　)

A. $130,000　　B. $250,000

C. $330,000　　D. $450,000

4. Case analysis.

(1) Assume that a company sold $60,000 products to its new retailer on account. The company gave its new retailer a cash discount at the term of 2/10, 1.5/20, n/30.

Required: please make the entry according to these situations below:

① If the retailer paid the amount in 10days, please make the entry.

② If the retailer paid the amount in 20 days, please make the entry.

③ If the retailer paid the amount after discount period, please make the entry.

(2) Jim Clinic started its business on Jan. 1, 2014. According to the transactions in the year of 2014, please make entries for each transaction and report the profit or net income in the single-step income statement for Jim Clinic.

① Jim invested $200,000 in cash to open a clinic.

② On Jan. 1, 2014, the clinic purchased equipment for $10,000 in cash.

③ On Jan. 1, 2014, paid clinic rent $15,000 for two years.

④ On Jan. 1, 2014, the clinic loaned $50,000 from local bank. The annual interest rate was

10%, and the term was three years. The principal was paid off at maturity date and the interest was paid in the end of each year.

⑤ The clinic purchased $800 office supplies on account.

⑥ Performed consulting service for patients, and received $5,000 in cash.

⑦ Paid $4,000 advertising expense to a local newspaper.

⑧ Performed surgery for a patient, the total amount of $32,000 had not been received.

⑨ Paid $12,000 salary to nurse.

⑩ Suppose the equipment had a useful life of five years, with a salvage value of $400.

Chapter 7

Financial Statements

Learning Objectives:

By the end of this chapter, the learners are supposed to:

- gain some knowledge about the classified financial statements
- analyze financial statements to improve operating results
- develop skills in preparing the financial statements
- be familiar with the terms and useful expressions in this chapter

Pre-class Task

A Balance sheet is a written documents for reflecting the financial position on a specific date by enterprises. Here is a balance sheet of Peak Co., ltd. (as shown in **Exhibit 7-1**). Did you find the relationship between the Balance Sheet and accounting equation?

Exhibit 7-1

Peak Co., ltd.

Balance Sheet

July 31, 2014

ASSETS		**LIABILITIES**	
Current assets:		Current liabilities:	
Cash	$34,000	Accounts payable	$10,000
Accounts receivable	20,000	Interest payable	2,000
Inventories	28,000	Total current liabilities	$12,000
Total current assets	$82,000	Non-current liabilities:	
Non-current assets:		Bonds payable	$40,000
Fixed assets	$20,000	Total liabilities	$52,000
Total non-current assets	$20,000	**STOCKHOLDERS' EQUITY**	
		Common stock	$35,000
		Retained earnings	$15,000
		Total stockholders' equity	$50,000
		Total liabilities & stockholders'	
Total assets	$102,000	equity	$102,000

Introductory Remarks

The owner of a business tends to ask three main questions periodically: What is my net income? What's the amount of my capital? Is my business competent? You are to find satisfactory answers to these questions in the financial statements. The financial statements show the financial position and the operating results of the business during a particular period. They are the main source of financial information to people outside the business organizations and also are useful to management, which aim at helping decision-makers in evaluating the financial strength, profitability and future of a business. The balance sheet, along with the income statement and cash flow statement are three basic forms of financial statements. Accounting elements are included in all the statements, of which are six main elements: assets, liabilities, equity, revenues, expenses and profit. If you are a shareholder of a company, it is important that you understand how the financial statements are structured, how to analyze them and how to read them.

Section 1　Balance Sheet

7.1.1　Definition

In financial accounting, a balance sheet or statement of financial position is a summary of the financial balances of a sole proprietorship, a business partnership, a corporation or other business organizations at a particular period of time. The balance sheet provides information based on the accounting equation:

Assets=Liabilities + Owner's Equity

We can safely say a balance sheet is a snapshot of the company's financial position at a single point in time. Of the three basic financial statements, the balance sheet is the only statement which applies to a single point in time of a business' s calendar year.

7.1.2　The Structure of Balance Sheet

● **The Contents of Balance Sheet**

The balance sheet contains the legal name of the entity, the title of the statement and presenting date. Balance sheet describes its assets, liabilities and owner's equity through a set of accounts. Assets in balance sheet consist of current assets and non-current assets. Liabilities in balance sheet consist of current liabilities and non-current liabilities. The current assets include cash, accounts receivable, supplies, inventories, etc.; The non-current assets include buildings, equipment, intangible assets, etc.. Its current liabilities include short-term loan; accounts payable; notes payable, wages payable, interest payable, etc.; Non-current liabilities include long-term loans, bond payable, etc.; Owner's equity consists of common stock, additional paid-in capital and retained earnings. Numbers are attached to these lists of assets, liabilities and owner's equity. These numbers show the economic operation of the entity. All the information in the balance sheet can help the statement users to make right economic decisions.

● **The Sequence of Accounting Elements in Balance Sheet**

As we know, a common company balance sheet consists of three accounting elements: assets, liabilities, and owner's equity. The main categories of assets are usually listed first, and typically in order of liquidity. Current assets with higher degree of liquidity like cash, accounts receivable that can be converted into cash or consumed within one year or one operating cycle are listed on the top. Non-current assets with lower degree of liquidity like fixed assets, intangible assets, long-term investment are listed at the bottom. Assets are followed by the liabilities. Liabilities are

ordered in the sequence of payment term. Current liabilities with short payment term which should be paid within a year or an operating cycle are listed in the front, such as accounts payable, short-term loan, unearned revenue, etc. Non-current liabilities with long-term payment term which should be paid over a year or an operating cycle are are listed in the back, such as long-term debts, bonds payable, etc. The difference between the assets and the liabilities is known as equity or the net assets or the net worth or capital of the company and according to the accounting equation, owner's equity must equal assets minus liabilities. According to the permanence, the items of owner's equity which stay in the company longer should be listed in the front, such as paid-in capital, and those stay in the company shorter should be listed in the back, such as retained earnings.

- **The Forms of Balance Sheet**

The balance sheet involves two forms: the report form and the account form. Individuals and small businesses tend to have simple balance sheets. Larger businesses tend to have more complex balance sheets, and these are presented in the organization's annual report. In the account form, the assets are listed on the left side of the page, and liabilities and owner's equity on the right side. The equation like this shows how assets are financed: either by borrowing money (liability) or by using the owner's money (owner's or shareholder's equity). **Exhibit 7-1** shows the account format. In the report form, the assets are listed at the top, while the liabilities and owner's equity are listed below the assets. **Exhibit 7-2** illustrates the report form.

Exhibit 7-2

ABC Company

Statement of Financial Position as of December 31, 2014

ASSETS	
Current assets:	
Cash	$xxx
Accounts receivable	xxx
Less:allowance for doubtful accounts	(xxx)
Total current assets	$xxx
Non-current assets:	
Equipment	$xxx
Less: accumulated depreciation	(xxx)
Total non-current assets	xxx
Total assets	$xxx

LIABILITIES	
Current liabilities:	
Notes payable	$xxx
Accounts payable	xxx
Total current liabilities	$xxx
Non-current liabilities:	$xxx
Long-term loan	xxx
Total non-current liabilities	$xxx
Total liabilities	$xxx
STOCKHOLDERS' EQUITY	
Additional paid-in capital	$xxx
Retained earnings	xxx
Total stockholders' equity	$xxx
Total liabilities & stockholders' equity	$xxx

Example 7.1

Let's take the information of Example 2.2 and prepare the balance sheet for James Agency Company. The balance sheet for James Agency Company can be shown in ***Exhibit 7-3****.*

Exhibit 7-3

James Agency Company

Statement of Financial Position as of December 31, 2014

ASSETS		**LIABILITIES**	
Current assets:		Current liabilities:	
Cash	$15,600	Accounts payable	$2,700
Notes receivable	9,000	Unearned revenue	4,000
Interest receivable	180	Total current liabilities	$6,700
Office supplies	400	Total liabilities	$6,700
Prepaid rent	2,500		
Total current assets	$27,680	**STOCKHOLDERS' EQUITY**	
Non-current assets:		James Agency, capital	20,000
Office equipment	$1,800	Retained earnings	2,780
Total non-current assets	$1,800	Total stockholders' equity	$22,780
Total assets	$29,480	Total liabilities & stockholders' equity	$29,480

Example 7.2

Let's take another example to illustrate balance sheet. The following T-accounts summarized Victor Company's account balances in the end of 2014, they are shown in ***Exhibit 7-4****, and the balance sheet of Victor Company on December 31, 2014 is shown in* ***Exhibit 7-5****.*

Exhibit 7-4

Assets

Cash	
400,000	10,000
12,000	80,000
80,000	20,000
20,000	600
	4,000
	5,000
	15,000
377,400	

Accounts Receivable	
50,000	
50,000	

Allowance for Bad Debt	
	500
	500

Office Supplies	
600	
600	

Inventory	
Beginning Bal. 24,000	29,000
20,000	
15,000	

Prepaid Insurance	
5,000	2,500
2,500	

Machine	
10,000	
10,000	

Accumulated Depreciation	
	1,900
	1,900

Patent	
20,000	2,000
18,000	

Long-term Investment	
80,000	
80,000	

Liabilities

Accounts Payable	
600	beginning bal. 24,000
	20,000
	600
	44,000

Notes Payable	
	80,000
	80,000

Interest Payable		*Interest Tax Payable*		*Dividends Payable*	
	800		3,945		10,000
	800		3,945		10,000

Owner's Equity

Common Stack		*Additional Paid-in Capital*		*Retained Earnings*	
	200,000		200,000		22,355
	200,000		200,000		22,355

Dividends	
10,000	
10,000	

Revenues

Sales Revenue		*Dividends Revenue*	
	20,000 50,000		12,000
	70,000		12,000

Costs & Expenses

Cost of Goods Sold		*Advertising Expense*		*Telephone Expense*	
29,000		3,000		1,000	
29,000		3,000		1,000	

Interest Expense		*Sales Salaries Expense*		*Insurance Expense*	
800		15,000		25,000	
800		15,000		25,000	

Depreciation Expense		*Amortization Expense*		*Bad Debt Expense*	
1,900		2,000		500	
1,900		2,000		500	

Income Tax Expense	
3,945	
3,945	

Exhibit 7-5

Victor Company

Statement of Financial Position as of December 31, 2014

ASSETS		**LIABILITIES**	
Current assets:		Current liabilities:	
Cash	$377,400	Accounts payable	$44,000
Accounts receivable	50,000	Notes payable	80,000
Less: allowance for bad debts	(500)	Interest payable	800
Office supplies	600	Income tax payable	3,945
Inventory	15,000	Dividends payable	10,000
Prepaid insurance	2,500	Total current liabilities	$138,745
Total current assets	$445,000	Total liabilities	$138,745
Non-current assets:		**STOCKHOLDERS' EQUITY**	
Machine	$10,000	Common stock	200,000
Less: accumulated depreciation	(1,900)	Additional paid-in capital, common stock	200,000
Patent	18,000	Retained earnings	22,355
Long-term investment	80,000	Less: dividends	(10,000)
Total non-current assets	$106,100	Total stockholders' equity	$412,355
Total assets	$551,100	Total liabilities & stockholders' equity	$551,100

Section 2 Income Statement

7.2.1 Definition

The income statement is a financial statement summarizing the results of a company's operations by matching revenues and related expenses for a particular accounting period, such as a month, half a year, or one year.

Income statement indicates revenues, expenses and net income(profit) or loss of a business. Just as the terms “profit”, “earnings” and “income” all mean the same thing and can be used interchangeably, it is also referred to as a “statement of income”, “statement of earnings”, “statement of operations” and “statement of operating results”, of which income statement is the most popular form. Items shown in an income statement of a merchandising company may differ form those of a service company or a manufacturing company but they always adhere to the following equation:

Total Revenues − Total Expense = Net Income/Loss

7.2.2 Forms of Income Statement

There are two common forms of income statements in financial reporting: the multiple-step income statement and the single-step income statement. The single-step form emphasizes total revenues and total expenses as the factors determining net income. The only disadvantage of this form is that amounts such as gross profit and income form operations are not readily available for analysis. **Exhibit 7-6** shows the single-step income statement.

Exhibit 7-6

ABC Company

Income Statement for the Year Ended December 31, 2014

REVENUES	
Sales	$505,200
Interest & dividends	6,500
Gain on sale of equipment	12,000
Total revenues	$523,700
COSTS &EXPENSES	
Cost of goods sold	$323,000
Selling expense	40,000
Depreciation expense	8,500
Interest expense	7,000
Income tax expense	56,628
Total costs & expenses	$435,128
NET INCOME	$88,572

Example 7.3

Let’s take the information of Example 2.2, and prepare the sing-step income statement for

*James Agency Company (as shown in **Exhibit 7-7**).*

Exhibit 7-7

James Agency Company

Income Statement for the Year Ended December 31, 2014

REVENUES	
Consulting revenue	$6,000
Interest revenue	180
Total revenues	$6,180
COSTS &EXPENSES	
Telephone expense	$900
Rent expense	2,500
Total expenses	$3,400
NET INCOME	$2,780

The multiple-step income statement (as the name implies) takes a series of steps including sections, subsections and subtotals, such as gross profit, operating profit, income before tax and net income. The calculating steps of income statement are shown as follows:

First, the cost of goods sold is deducted from net sales to arrive at gross profit.

Second, operating expenses are subtracted from the gross profit to obtain operating income.

Finally, income tax expenses are subtracted to arrive at net income.

The multiple-step income statement for ABC Company is illustrated as shown in **Exhibit 7-8**.

Exhibit 7-8

ABC Company

Income Statement for the Year Ended December 31, 2014

Sales revenue	$505,200
Cost of goods sold	323,000
Gross profit	$182,200
Operating expenses	
Selling expense	$40,000
Depreciation expense	8,500
Total operating expenses	$48,500
Operating income	$133,700
Other income & expenses	
Interest & dividends	$6,500

Gain on sale of equipment	12,000
Interest expense	7,000
Total other income	$11,500
Income before income taxes	$145,200
Income tax expenses	56,628
Net income	$88,572

Example 7.4

The multiple-step income statement for Victor Company is illustrated as shown in ***Exhibit 7-9****.*

Exhibit 7-9

Victor Company

Income Statement for the Year Ended December 31, 2014

Revenues	
Sales revenue	$70,000
Cost of goods sold	29,000
Gross profit	$41,000
Operating expenses	
Advertising expenses	$3,000
Telephone expenses	1,000
Sales salaries expense	15,000
Insurance expense	2,500
Depreciation expense	1,900
Amortization expense	2,000
Bad debt expense	500
Total operating expenses	$25,900
Operating income	$15,100
Other income & expenses	
Dividends revenue	$12,000
Interest expense	800
Total other income	$11,200
Income before income taxes	$26,300
Income tax expense (15%)	3,945
Net Income	$22,355

Section 3 Cash Flow Statement

7.3.1 Definition

Essentially, the cash flow statement is concerned with the flow of cash in and out of the business, it reflects a firm’s liquidity. From a cash flow statement you can find satisfactory answers to “How does a company obtain its cash?” “Where does a company spend its cash?” and “What is the change in the cash balance?”

7.3.2 Classification of Cash Flows

Any cash flows of a business, whether cash receipts or cash payments, are generally classified into three categories: cash flows from operating activities, cash flows from investing activities and cash flows from financing activities.

● **Cash Flows from Operating Activities**

Operating activities include the sale and purchase or production of goods and services, including collecting from customers, paying suppliers or employees, and paying for items such as rent, taxes and interest. Normally, changes made in cash, accounts receivable, depreciation, inventory and accounts payable can be reflected clearly in cash from operations.

● **Cash Flows from Investing Activities**

Investing activities consist of 1. purchase and sale of non-current assets, such as property, plants equipment and so on. 2. purchase and sale of short-term investments other than cash equivalents, such as securities 3. lending and collecting loans.

● **Cash Flows from Financing Activities**

Financing activities involve obtaining resources from owners and creditors and repaying amounts borrowed. Cash inflows from financing activities include 1. Cash proceeds from selling shares. 2. Cash receipts from borrowings through notes, loans mortgages and bonds. Cash outflows from financing activities include 1. Cash payments in the form of dividends or other distributions. 2. Cash repayments of the principal amounts borrowed.

Preparing the statement of cash flows is relatively simple. Firstly, list the activities increasing cash (cash inflows) and those decreasing cash (cash outflows). Secondly, place each cash inflow and outflow into one of the three categories according to the types of activity. **Exhibit 7-10** indicates the statement of cash flows of ABC Company.

Exhibit 7-10

ABC Company

Statement of Cash Flow for the Year Ended December 31, 2014

Cash Flows From Operating Activities	
Cash received from customers	$xxx
Cash paid to suppliers and employees	(xxx)
Interest received	xxx
Interest paid	(xxx)
Net Cash Used in Operating Activities	$xxx
Cash Flows From Investing Activities	
Cash received from sale of equipment	$xxx
Cash paid to purchase equipment	(xxx)
Net Cash Used in Investing Activities	$xxx
Cash Flows From Financing Activities	
Cash received from long-term debt	$xxx
Cash paid to long-term debt	(xxx)
Net Cash Used in Financing Activities	$xxx
Net increase (decrease) in cash and cash equivalents	
Cash and cash equivalents at the beginning of the year	$xxx
Cash and cash equivalents at the end of the year	$xxx

7.3.3 Methods of Reporting Operating Cash Flows

There are two methods of reporting cash flows: direct and indirect. The former refers to cash collected from customers and cash received from interest or dividends, while the latter refers to cash paid to suppliers for goods and services, to creditors for interest, to government agencies for taxes, and so on. They differ in how the cash flows from operating data are obtained, analyzed and reported but come out with the same results. But the indirect method is favored and frequently adopted by most accountants since it is easier to use and it can help to explain the reasons for the difference between net income and net cash flow.

Example 7.5

Let's take the information of Example 2.2, and prepare the statement of cash flow for James Agency Company (as shown in ***Exhibit 7-11****).*

Exhibit 7-11

James Agency Company

Statement of Cash Flow for the Year Ended December 31, 2014

Cash Flows From Operating Activities	
Cash received from customers	$10,000
Less: Cash payment for rent	$(5,000)
Cash payment for supplies	(400)
Net Cash Used in Operating Activities	$4,600
Cash Flows From Investing Activities	
Less: Cash used in investing activities	$(9,000)
Net Cash Used in Investing Activities	$(9,000)
Cash Flows From Financing Activities	
Cash received from shareholders	$20,000
Net Cash Used in Financing Activities	$20,000
Net increase (decrease) in cash and cash equivalents	$15,600
Cash and cash equivalents at the beginning of the year	$0
Cash and cash equivalents at the end of the year	$15,600

Special Terms and Useful Expressions

balance sheet 资产负债表

income statement 损益表

statement of cash flow 现金流量表

profitability 获利，盈利（状况）

summary 总结

snapshot （快照）照片

calendar year 日历年

liquidity 流动性

convert 转换

report form 报告式

account form 账户式

sequence 序列

presenting date 报告日期，提交日期

equivalent 等同物

subsection 分项；小节

subtotal 小计

proceed 进行；前进；收入，获利

Exercises

1. Fill in the blanks according to what you have learned in this chapter.

(1) The basic financial statements include:________, income statement and ____________.

(2) Balance sheet consists of three accounting elements:________________, liabilities, and __________.

(3) Assets are listed on the balance sheet in descending order of ___________. Assets of higher degree of liquidity are listed ________, and the assets of ___________degree of liquidity are listed in the back.

(4) Liabilities are ordered in the sequence of _____________. Current liabilities are listed___________. __________ are listed in the back.

(5) The balance sheet involves two forms: the report form and the___________.

(6) In the account form, the ______________ are listed on the left side of the balance sheet, ___________owner's equity on the right side.

(7) __________ reflects the operating results of a company in a specific accounting period.

(8) There are two common forms of income statements are _________and single-step income statement.

(9) A cash flow statement describes the flows of ________ into and out of an organization over a period of time.

(10) _________include the sale and purchase or production of goods and services, including collecting from customers, __________or employees, and paying for items such as rent, taxes and interest.

2. True or false.

(1) The balance sheet is just prepared yearly. (　　)

(2) The balance sheet shows the relationships among assets, liabilities and owner's equity on a particular day of an enterprise. (　　)

(3) There are two forms to create a balance sheet, the single-step and the multiple-step. (　　)

(4) The purpose of an income statement is to show the financial position of an enterprise at a particular date. (　　)

(5) The income statement appears in two forms, account form and report form. (　　)

(6) For the report form, the assets are listed at the top, while the liabilities and owner's equity are listed below the assets. (　　)

(7) The statement of cash flows reports the inflows, outflows and net flow of cash during a

particular period. (　　)

(8) Financial statements is just to provide accounting information for the internal users to make decisions. (　　)

3. Choose the correct answer.

(1) The balance sheet of an enterprise shows (　　).

A. the cash flow of an enterprise in a specific accounting period

B. the operating result of an enterprise in a specific accounting period

C. the financial position of an enterprise in a specific accounting period

D. the financial position of an enterprise on a specific date

(2) The profit of an enterprise during an accounting period is equal to (　　).

A. total cash payments minus total cash receipts

B. total cash receipts minus total cash payments

C. total revenues minus total expenses

D. total revenues minus total liabilities

(3) The statement of cash flow shows (　　).

A. cash payments and cash receipts of a company during an accounting period

B. operating, investing and financing activities of a company during an accounting period

C. operating result of a company during an accounting period

D. operating position of a company during an accounting period

(4) A transaction affecting only two accounts causes a liability to increase by a certain amount. (　　) could be another effect of the same transaction.

A. An asset account is decreased by the same amount

B. An owner's equity account is increased by the same amount

C. An revenue account is increased by the same amount

D. An expense account is increased by the same amount

(5) A Company has determined that accounts receivable is $80,000 and the allowance for bad debts is $4,000. The net receivables to be reported on the balance sheet is (　　).

A. $76,000　　　　B. $79,000

C. $80,000　　　　D. $84,000

(6) At the beginning of the year, a company's accounts receivable account balance was $50,000. During the year, it had credit sales of $350,000. At the end of the year, the balance of the accounts receivable was $30,000. This company collected (　　) from customers.

A. $350,000　　　　B. $370,000

C. $400,000 D. $430,000

(7) On a multiple-step income statement, the excess of net sales over the cost of goods sold is called ( ).

A. operating income B. net income

C. gross profit D. total other income

(8) On a multiple-step income statement, which of the following expenses would normally be classified as other expenses ? ( )

A. Selling expenses B. Interest expenses

C. Administrative expenses D. Advertising expenses

(9) On December 31, 2014, a business had $80,000 cash collections from customers. Cash paid to employees of $10,000, and cash payments for dividends of $3,000. In the statement of cash flow, cash used in operating activities for 2014 would be ( ).

A. $67,000 B. $70,000

C. $77,000 D. $80,000

(10) On December 31, 2014, a business had cash paid to suppliers of $100,000, cash paid for equipment of $20,000, cash paid for dividends of $5,000. Cash paid for long-term debts principal of $180,000. In the statement of cash flow, cash used in financing activities for 2014 would be ( ).

A. −$5,000 B. −$100,000

C. −$180,000 D. −$185,000

4. Case analysis.

Jason Network Corporation started its operation On Jan. 1, 2014. In 2014, the corporation had economic transaction as follows. According to the transactions, prepare the semiannual balance sheet and income statement for Jason Network Corporation. (income tax without consideration)

(1) On Jan. 1, the owners invested $500,000 in the corporation by purchasing 500,000 shares of $1 par common stock.

(2) On Jan. 1, the corporation sold $1,000,000 in bonds. The annual interest rate of the bonds was 5%. The interest was to be paid semi-annually.

(3) On Jan. 1, paid $20,000 for office rent for two years.

(4) On Jan. 1, the corporation paid $40,000 for the copyright. This intangible asset was expected to be useful for five years.

(5) On Jan. 1, the corporation purchased $10,000 insurance for this year.

(6) On Jan. 1, the corporation purchased equipment, the total amount of equipment was $50,000. Half paid by cash and the rest of the payment did not pay yet. The useful life of the equipment was four years, with a salvage value of $2,000. The corporation used straight-line depreciation method.

(7) On Feb. 12, paid $3,000 to purchase office supplies.

(8) On Mar. 5, the corporation provided a consulting service for a client on account, and the total amount was $80,000.

(9) On Mar. 18, repaid $5,000 of the accounts payable.

(10) On Apr. 10, the corporation signed up a contract with a company to provide internet consulting services. Jason Network Corporation received $50,000 as an advanced consulting revenue.

(11) On May. 10, the corporation completed the consulting work. The consulting service contract which signed up last month was finished.

(12) On Jun. 30, 2014, paid $20,000 for advertising fees.

(13) On Jun. 30, 2014, the corporation paid $60,000 of employees' wages for the first half year.

(14) On Jun. 30, the corporation collected $70,000 of its accounts receivable.

Chapter 8

Financial Statement Analysis

Learning Objectives:

By the end of this chapter, the learners are supposed to:

- understand the importance of financial statement analysis
- have a good command of three ways of financial statement analysis
- develop the ability to analyze the financial statements of an organization
- be familiar with the terms and useful expressions in this chapter

Pre-class Task

James Agency Company is a law firm. The company ran its business in 2014. The balance sheet and the income statement for James Agency Company can be shown in **Exhibit 8-1** and **Exhibit 8-2**.

Exhibit 8-1

James Agency Company

Statement of Financial Position as of December 31, 2014

ASSETS		**LIABILITIES**	
Current assets:		Current liabilities:	
Cash	$15,600	Accounts payable	$2,700
Notes receivable	9,000	Unearned revenue	4,000
Interest receivable	180	Total current liabilities	$6,700
Office supplies	400	Total liabilities	$6,700
Prepaid rent	2,500		
Total current assets	$27,680	**STOCKHOLDERS' EQUITY**	
Non-current assets:		James Agency, capital	20,000
Office equipment	$1,800	Retained earnings	2,780
Total non-current assets	$1,800	Total stockholders' equity	$22,780
Total assets	$29,480	Total liabilities & stockholders' equity	$29,480

Exhibit 8-2

James Agency Company

Income Statement for the Year Ended December 31, 2014

REVENUES	
Consulting revenue	$6,000
Interest revenue	180
Total revenues	$6,180
COSTS & EXPENSES	
Telephone expense	$900
Rent expense	2,500
Total expenses	$3,400
NET INCOME	$2,780

After reading the balance sheet and the income statement above, do you think the company operates well or not? Do you know how to analyze the financial statements? What methods do you use to analyze the financial statements?

Introductory Remarks

Some of the most important information about a company is usually reflected by its financial statements. We are supposed to analyze those statements in order to make an informed decision, improve the company's efficiency, and reduce guesses and intuition. Financial statement analysis (or financial analysis) is a process of reviewing and analyzing a company's financial statements to make better economic decisions, which involves specific techniques for evaluating risks, performance, financial health, and future prospects of an organization. Among the statements, income statement, balance sheet, statement of cash flows are the most common. Analysis is useful to understand a company's past performance, evaluate its current financial positions and also to estimate future prospects. There are mainly three ways of financial statements analysis: ratio analysis, horizontal analysis and vertical analysis.

Section 1 Ratio Analysis

Analysts use financial ratios to get an idea about a company's performance and compare its performance with that of other companies in the industry. Ratio analysis is used to evaluate the financial success of a company by calculating a series of financial ratio indicators. Through it, the meaningful relationship between the financial statement items is evident and the aspects which need further attention can not be ignored. Thus, we can be well-informed of the information about operating activities such as liquidity, solvency and profitability and make relative decisions. There are three main types of ratios: liquidity ratios, profitability ratios and leverage ratios. These are typically analyzed over time and across competitors in an industry.

8.1.1 Liquidity Ratios

Liquidity ratios are used to assess the ability of an organization to meet its financial obligations and determine how quickly a company can turn its assets into cash if it experiences financial difficulties or bankruptcy. Liquidity ratios are probably the most common indicator of a company's short-term solvency. If the company has sufficient assets to pay its liabilities, it is a positive sign. If the company does not have adequate assets to meet its upcoming liabilities, investors should investigate further.

● **Current Ratio**

The current ratio is the ratio of current assets divided by current liabilities. It is computed as

follows:

$$\textbf{Current Ratio} = \frac{\textbf{Current Assets}}{\textbf{Current Liabilities}}$$

Example 8.1

*Let's take the information of **Exhibit 7-5**, the current ratio for Victor Company is:*

$$\textit{Current Ratio} = \frac{\textit{Current Assets}}{\textit{Current Liabilities}}$$

$$= \frac{445{,}000}{138{,}745}$$

$$= 3.21 : 1$$

The higher the current ratio, the greater ability of a company to pay off its current liabilities. If the current ratio is too low, the company may not able to meet its short-term obligations and may face liquidity problems. The generally accepted current ratio is 2 : 1.

Quick Ratio

Quick assets are cash, short-term investments, accounts receivable and notes receivable. These are the most liquid current assets. Quick ratio is also known as the acid-test ratio, it is computed as follows:

$$\textbf{Quick Ratio} = \frac{\textbf{Cash+Short-term Investments+Accounts Receivable+Notes Receivable}}{\textbf{Current Liabilities}}$$

Example 8.2

*Let's take the information of **Exhibit 7-5**, the quick ratio for Victor Company is:*

$$\textit{Quick Ratio} = \frac{\textit{Cash+Short-term Investments+Accounts Receivable+Notes Receivable}}{\textit{Current Liabilities}}$$

$$= \frac{377{,}400+49{,}500}{138{,}745}$$

$$= 3.08 : 1$$

The generally accepted quick ratio is 1 : 1. If the ratio is too high, the company may hold excessive liquid assets. If the ratio is too low, the company may face liquidity problems.

8.1.2 Profitability Ratios

What every firm is most concerned with is its profitability because profitability is the ability for an entity to earn profits. Profitability ratios are used to determine the company's bottom line. A business without profit cannot sustain its business in the long run. Profitability ratios show a

company's overall efficiency and performance. There are two kinds of profitability ratios: margins and returns. Ratios which show margins represent the firm's ability to translate sales dollars into profits at various stages of measurement. Ratios that show returns represent the firm's ability to measure the overall efficiency of the firm in generating returns for its shareholders.

● **Profit Margin Ratio**

Profit margin ratio is net income divided by net sales, while gross profit rate is gross profit divided by net sales. Profit margin ratio is computed as follows:

$$\textbf{Profit Margin Ratio} = \frac{\textbf{Net Income}}{\textbf{Net Sales}} \times \textbf{100\%}$$

Profit margin ratio determines the percentage of each dollar of sales that generates net income. While gross profit rate represents what kind of profit a company is making from its sales after deducting the cost of the goods sold.

Example 8.3

*Let's take the information of **Exhibit 7-9**, the profit margin ratio for Victor Company is:*

$$\textit{Profit Margin Ratio} = \frac{\textit{Net Income}}{\textit{Net Sales}} \times 100\%$$

$$= \frac{22{,}355}{70{,}000} \times 100\%$$

$$= 31.94\%$$

● **Return on Assets Ratio**

Return on assets ratio is another profitability ratio that measures the overall profitability of assets and also reflects the combined effects of cost control and assets utilization. It is calculated by dividing net income by average total assets.

$$\textbf{Return on Assets Ratio} = \frac{\textbf{Net Income}}{\textbf{Average Total Assets}} \times \textbf{100\%}$$

Example 8.4

Suppose a company's income statement shows the net income was \$868,522 in 2012. The balance sheet shows the total assets were \$4,065,720 in 2012 and \$5,280,940 in 2013. The Return on assets ratio is computed as follows:

$$\textit{Return on assets ratio} = \frac{\textit{Net Income}}{\textit{Average Total Assets}} \times 100\%$$

$$= \frac{868{,}522}{(5{,}280{,}940 + 4{,}065{,}720)/2} \times 100\%$$

$$= 18.58\ \%$$

8.1.3 Leverage Ratio

Leverage ratio refers to evaluating a company's long-term solvency and stability. The most common leverage ratios are the debt ratio and the debt-to-equity ratio.

● **Debt Ratio**

Debt ratio is a measure of a company's financial leverage, indicating the percentage of total debt (the sum of current liabilities and long-term liabilities) and total assets (the sum of current assets, fixed assets, and other assets such as goodwill) as follows:

$$\textbf{Debt Ratio} = \frac{\textbf{Total Liabilities}}{\textbf{Total Assets}} \times \textbf{100\%}$$

The higher the ratio, the greater risks will be associated with the firm's operation, high debt ratio can also lead to low borrowing ability of a company, which in return decrease the company's financial flexibility.

Example 8.5

*Let's take the information of **Exhibit 7-5**, the debt ratio for Victor Company is:*

$$\textit{Debt Ratio} = \frac{\textit{Total Liabilities}}{\textit{Total Assets}} \times 100\%$$

$$= \frac{138{,}745}{551{,}100} \times 100\%$$

$$= 25.18\ \%$$

● **Debt-to-equity Ratio**

The debt-to-equity ratio is a measure of the relationship between the capital contributed by creditors and the capital contributed by owners. It reflects the percentage of what part of the resources is obtained by borrowing and what part is invested by the owners . It also shows the extent to which shareholder's equity can fulfill a company's obligations to creditors in the event of a liquidation. The formula for the debt-to-equity ratio is :

$$\textbf{Debt-to-Equity Ratio} = \frac{\textbf{Total Debt}}{\textbf{Total Equity}} \times \textbf{100\%}$$

Example 8.6

*Let's take the information of **Exhibit 7-5**, the debt-to-equity ratio for Victor Company is:*

$$\textit{Debt-to-Equity Ratio} = \frac{\textit{Total Debt}}{\textit{Total Equity}} \times 100\%$$

$$= \frac{138{,}745}{412{,}355} \times 100\%$$

$$= 33.65\ \%$$

8.1.4 Limitations of Ratio Analysis

Ratio analysis is very useful and widely used, but there exist several limitations that must be considered before using the analysis. What's more, analysts must be conscious of these flaws and try to overcome them in order to prevent the limitations of ratio analysis from entering a company's decision-making process. The following are some common limitations:

- **Accounting Methods**

Different companies may use different methods to value their inventory. Differences in accounting methods between companies sometimes make comparisons difficult. If companies are compared when using different inventory valuation methods, it will inevitably lead to undervalued assets on the balance sheet and the comparisons won't be accurate. Another issue is depreciation, different companies use different depreciation methods, the use of different depreciation methods affects companies' financial statements differently and won't lead to valid comparisons.

For example, suppose everything between the two companies is the same except for one asset, one company uses straight-line depreciation while the other uses double declining balance depreciation, the former will have a better return on asset ratio because of a higher net income early in the depreciation cycle. The only difference between the two companies lies in how they depreciate assets, yet their ratios are different.

- **Inflation**

When comparing one period to another on a financial statement, accountants are less likely to take inflation into account. In fact, inflation may have badly distorted a company's balance sheet that no wonder sometimes reported values on balance sheets are often different from "real" values. Thus a ratio analysis of one company over time or a comparative analysis of companies during different periods must be interpreted with judgment. In addition, earnings will increase due to inflation and not performance.

- **Seasonal Factors**

Generally, the balance sheet lists the assets and liabilities of an entity on one day of the year only. As a result, the balance sheet may not necessary represent the year of a whole due to seasonal factors. Seasonal factors may distort ratio analysis. A ratio's values may be distorted as account

balances change from the beginning to the end of an accounting period. For example, an ice cream shop will make higher profits in summer than in winter.

In all, it is dangerous to make ratio analysis in a mechanical, unthinking manner. On the other hand, ratio analysis can provide insightful information if it is used wisely.

Section 2 Horizontal Analysis

8.2.1 Horizontal Analysis

Horizontal analysis, also called “trend analysis,” is used to discover trends in the earnings, assets and liabilities of a company over the course of several years. It compares financial information for two or more successive periods and involves the left-to-right movement of our eyes while viewing comparative financial statements. From such an analysis, analysts can tell whether the numbers in certain items are increasing or decreasing over time, which reflects positive or perhaps troubling trends in many fields. Comparing the financial statements of more than one period can provide better context and help identify any changes that may signal strengths or weaknesses. There are three main types of trends: short-term, intermediate-term and long-term.

In horizontal analysis, to compute the trend changes, a base year is selected and the dollar amount of each financial statement item in subsequent years is converted to a percentage of the base year dollar amount.

Example 8.7

Assuming 2013 is the base period amount, 2014 is analysis period amount. ***Exhibit 8-3*** *shows the dollar and percent changes of comparative balance sheet for Jackson Company and* ***Exhibit 8-4*** *shows the dollar and percent changes of comparative income statement for Jackson Company.*

Exhibit 8-3

Jackson Company Comparative Balance Sheet For the Years Ended				
	12/31/14	12/31/13	Dollar Change	Percent Change
ASSETS				
Current assets				
Cash	$308,550	$180,800	$127,750	70.66%

续表

Jackson Company Comparative Balance Sheet For the Years Ended				
	12/31/14	12/31/13	Dollar Change	Percent Change
Accounts receivable	41,450	11,000	30,450	276.82%
Office supplies	1,400	1,200	200	16.67%
Total current assets	$351,400	$193,000	$158,400	82.07%
Non-current assets				
Equipment, net	$8,750	$8,750	0	
Total non-current assets	$8,750	$8,750	0	
Total assets	$360,150	$201,750	$158,400	78.51%
LIABILITIES				
Current liabilities				
Accounts payable	$2,500	$5,000	($2,500)	(50%)
Notes payable	60,000	50,000	10,000	20%
Interest payable	4,000	—	4,000	
Income tax payable	18,412.50	7,012.50	11,400	162.57%
Total current liabilities	$84,912.50	$62,012.50	$22,900	36.93%
Non-current liabilities				
Long-term loan	$100,000	—	$100,000	
Total non-current liabilities	$100,000	—	$100,000	
Total liabilities	$184,912.50	$62,012.50	$122,900	198.19%
STOCKHOLDERS' EQUITY				
Additional paid-In capital	$120,000	$100,000	$20,000	200%
Retained earnings	55,237.50	39,737.50	15,500	39.01%
Total stockholders' equity	$175,237.50	$139,737.50	$35,500	25.40%
Total liabilities & stockholders' equity	$360,150	$201,750	$158,400	78.51%

Exhibit 8-4

Jackson Company Comparative Income Statement For the Years Ended				
	12/31/14	12/31/13	Dollar Change	Percent Change
Sales	$162,900	$102,000	$60,900	59.71%
Expenses				
Selling expense	$56,000	$34,000	$22,000	64.71%
General expense	18,000	15,000	3,000	20%
Interest expense	14,000	5,000	9,000	180%
Depreciation expense	1,250	1,250	0	
Total expenses	$89,250	$55,250	$34,000	61.54%
Income before income taxes	$73,650	$46,750	$26,900	57.54%
Less: income tax expense	18,412.50	7,012.50	11,400	162.57%
Net income	$55,237.50	$39,737.50	$15,500	39.01%

Use horizontal analysis to calculate the amount change and percentage change for balance sheet and income statement, analysis period is the point of time under analysis, and base period is the point of time used for comparison. The previous year is used as the base period. We compute the percent change for financial statements as follows:

$$\textbf{Percent change} = \frac{\textbf{Analysis period amount} - \textbf{Base period amount}}{\textbf{Base period amount}} \times 100\%$$

When there is no value in the base period, there is no percent change. When an item has a value in the base period and no value in the analysis period, the decrease is 100%.

8.2.2 Limitations of Horizontal Analysis

Although horizontal analysis is highly useful, there are still some limitations, on the one hand, you can perform horizontal analysis only for income statements and balance sheets but not cash flow statement. On the other hand, if the dollar amount of an item is available for one period, but not the other, you cannot compute the dollar or percentage change between periods.

Section 3 Vertical Analysis

8.3.1 Vertical Analysis

Vertical analysis sometimes is referred to as "common-size analysis", which allows users to compare financial statements between companies and between years. In vertical analysis, each number on the financial statement is converted to a percentage of the base amount. Vertical analysis is more practical and more comprehensive compared with traditional financial statements which report each item as a dollar amount. For example, companies with different size show different numbers, making comparisons difficult, but with the help of vertical analysis, one can compare the percentage of each item to that of the same item on a different company's financial statement, regardless of the size of the company. Similarly, companies that experience huge growth from one year to the next make comparisons difficult when using the original financial statements, while vertical analysis allows the user to compare financial results from one year to the next within the same company.

Example 8.8

In the common-size balance sheet, each value is computed using the total assets as the base amount. ***Exhibit 8-5*** *shows a common-size balance sheet for Jackson Company. In the common-size income statement, the amount of revenues is usually the base amount.* ***Exhibit 8-6*** *shows the common-size income statement for Jackson Company.*

Exhibit 8-5

Jackson Company Common-size Comparative Balance Sheet For the Years Ended				
	12/31/14	12/31/13	Common-size Percents	
			2014	2013
ASSETS				
Current assets				
Cash	$308,550	$180,800	85.67%	89.62%
Accounts receivable	41,450	11,000	11.51%	5.45%
Office supplies	1,400	1,200	0.39%	0.59%
Total current assets	$351,400	$193,000	97.57%	95.66%
Non-current assets				
Equipment, net	$8,750	$8,750	2.43%	4.34%

续表

Jackson Company Common-size Comparative Balance Sheet For the Years Ended				
	12/31/14	12/31/13	Common-size Percents	
			2014	2013
Total non-current assets	$8,750	$8,750	2.43%	4.34%
Total assets	$360,150	$201,750	100%	100%
LIABILITIES				
Current liabilities				
Accounts payable	$2,500	$5,000	0.69%	2.48%
Notes payable	60,000	50,000	16.66%	24.78%
Interest payable	4,000	—	1.11%	—
Income tax payable	18,412.50	7,012.50	5.11%	3.48%
Total current liabilities	$84,912.50	$62,012.50	23.58%	30.74%
Non-current liabilities				
Long-term loan	$100,000	—	27.77%	—
Total non-current liabilities	$100,000	—	27.77%	—
Total liabilities	$184,912.50	$62,012.50	51.34%	30.74%
STOCKHOLDERS' EQUITY				
Additional paid-in capital	$120,000	$100,000	33.32%	49.57%
Retained earnings	55,237.50	39,737.50	15.34%	19.70%
Total stockholders' equity	$175,237.50	$139,737.50	48.66%	69.26%
Total liabilities & stockholders' equity	$360,150	$201,750	100%	100%

Exhibit 8-6

Jackson Company Common-size Comparative Income Statement For the Years Ended				
	12/31/14	12/31/13	Common-size Percents	
			2014	2013
Sales	$162,900	$102,000	100%	100%
Expenses				
Selling expense	$56,000	$34,000	34.38%	33.33%
General expense	18,000	15,000	11.05%	14.71%
Interest expense	14,000	5,000	8.59%	4.90%

续表

Jackson Company Common-size Comparative Income Statement For the Years Ended				
	12/31/14	12/31/13	Common-size Percents	
			2014	2013
Depreciation expense	1,250	1,250	0.77%	1.23%
Total expenses	$89,250	$55,250	54.79%	54.17%
Income before income taxes	$73,650	$46,750	45.21%	45.83%
Less: income tax expense	18,412.50	7,012.50	11.30%	6.88%
Net income	$55,237.50	$39,737.50	33.91%	38.96%

Exhibit 8-5 shows Jackson Company's percentage common-size balance sheet in which all the values are expressed as a percentage of total assets. Exhibit 8-6 shows Jackson Company's percentage common-size income statement. The amount of sales is usually the base amount and all the items are expressed as a percentage of sales. From the Exhibit 8-6, we can see the company's total expenses increase to 54.79%, income tax expense increase from 6.88% to 11.30%, and net income decrease from 38.96% to 33.91%.

8.3.2 Limitations of Vertical Analysis

Vertical analysis provides a useful tool for financial statement users, but some limitations can't be ignored:

Firstly, if a company is only engaged in one activity in one year, the results of the analysis will be distorted. For example, a company purchases new production equipment in one year and sells the old equipment the next year, its fixed assets will increase sharply in the first year. The fixed asset percentage reported on the vertically analyzed balance sheet will be higher than normal.

Another limitation appears when comparing financial statements between companies. If the companies are engaged in various industries, they may report different asset percentages, making the comparison less meaningful. For example, a manufacturing industry will be more likely to report a large percentage for fixed assets, while a service industry tends to report very little in fixed assets. A wise user should take these limitations into account when choosing vertical analysis.

Special Terms and Useful Expressions

intuition 直觉
prospect 前途，前景
ratio analysis 比率分析
horizontal analysis 水平分析
vertical analysis 垂直分析
solvency 偿付能力
liquidity ratio 流动性比率
profitability ratio 盈利比率
leverage ratio 杠杆比率
indicator 指示器
current ratio 流动比率
quick ratio 速动比率
acid-test ratio 酸性测试比率
profit margin ratio 净利比率
return on assets ratio 资产收益率
debt ratio 负债率
debt-to-equity ratio 负债权益比率
limitation 局限
straight-line depreciation 直线折旧
double declining balance depreciation 双倍余额递减折旧
inflation 通货膨胀
distort 歪曲
insightful 富有洞察力的
base year 基准年
subsequent 接下来的
common-size analysis 共同比分析

Exercises

1. Fill in the blanks according to what you have learned in this chapter.

(1) ______________ is a process of reviewing and analyzing a company's financial statements to help users make better economic decisions.

(2) Financial statement analysis includes ratio analysis, ______________ and vertical analysis.

(3) ______________ are probably the most common indicator of a company's short-term solvency.

(4) ______________ that show returns represent the firm's ability to measure the overall efficiency of the firm in generating returns for its shareholders.

(5)______________ reflects a firm's ability to earn a net income form sales. It is calculated by dividing net income by net sales.

(6) ______________ is a measure of the relationship between the capital contributed by creditors and the capital contributed by owners.

(7) Return on assets ratio is net income divided by ______________.

(8) ________________ involves the up-to-down movement of our eyes while viewing

comparative financial statements.

2. True or false.

(1) Analyzing financial statement is useful to judge a company's past performance, evaluate its current financial positions and also to estimate future prospects. (　　)

(2) Vertical analysis involves the left-to-right movement of our eyes as we view comparative financial statements. (　　)

(3) Ratios which show returns represent the firm's ability to translate sales dollars into profits at various stages of measurement. (　　)

(4) Gross profit rate is net income divided by net sales. (　　)

(5) Leverage ratio refers to evaluating a company's short-term solvency and stability. The debt ratio and the debt-to-equity ratio are the most common leverage ratios. (　　)

(6) Differences in accounting methods between companies sometimes make comparisons difficult. (　　)

(7) Inflation and seasonal factors may distort ratio analysis. (　　)

(8) If a company is only engaged in one activity in one year, the results of the vertical analysis won't be distorted. (　　)

(9) Profitability ratios are used to assess the ability of an organization to meet its financial obligations. (　　)

(10) A firm with high debt ratios are said to be highly leveraged. The higher debt ratio, the greater risks will be associated with the firm's operation. (　　)

3. Match the English words in right Column with its Chinese in left Column.

（　　）1. Financial statement analysis	a. 盈利比率
（　　）2. Horizontal analysis	b. 股东权益
（　　）3. Liquidity ratios	c. 财务报表分析
（　　）4. Profitability ratios	d. 直线折旧法
（　　）5. Debt-to-equity ratio	e. 水平分析
（　　）6. Shareholder's equity	f. 流动比率
（　　）7. Straight-line depreciation	g. 长期债务
（　　）8. Long-term obligation	h. 负债股权比率

4. Choose the correct answer.

（1）Which of the statements does not belong to the financial statements? (　　)

A. Cash journal B. Balance sheet

C. Income statement D. Statement of cash flow

(2) Which of the following items does not belong to quick assets? ( )

A. Cash B. Accounts receivable

C. Equipment D. Short-term investments

(3) ( ) compares financial information for two or more successive periods when analyzing financial statements.

A. Ratio analysis B. Horizontal analysis

C. Vertical analysis D. Both B and C

(4) Debt ratio is computed as ( ).

A. total assets divided by net income

B. net income divided by total assets

C. total assets divided by total liabilities

D. total liabilities divided by total assets

(5) Return on assets ratio is another profitability ratio. It is computed as ( ).

A. total assets divided by net income

B. net income divided by total assets

C. net income divided by average total assets

D. net income divided by total sales

5. Case analysis.

Use vertical analysis to calculate the percentage changes of the common-size balance sheet and income statement for J&K Company.

J&K Company Common-size Comparative Balance Sheet For the Years Ended				
	12/31/14	12/31/13	Common-size Percents	
			2014	2013
Assets				
Current assets				
Cash	$204,400	$148,700		
Accounts receivable	65,900	58,000		
Inventories	68,000	70,000		

续表

J&K Company Common-size Comparative Balance Sheet For the Years Ended				
	12/31/14	12/31/13	Common-size Percents	
			2014	2013
Total current assets	$338,300	$276,700		
Total non-current assets	$41,000	$21,000		
Total assets	$379,300	$297,700		
Liabilities				
Current liabilities				
Accounts payable	$45,000	$36,500		
Interest payable	4,300	2,500		
Income tax payable	30,600	30,158		
Total current liabilities	$79,900	$69,158		
Total non-current liabilities	$70,000	$50,000		
Total liabilities	$149,900	$119,158		
STOCKHOLDERS' Equity				
Additional paid-in capital	$170,000	$120,000		
Retained earnings	59,400	58,542		
Total stockholders' equity	$229,400	$178,542		
Total liabilities & stockholders' equity	$379,300	$297,700		

J&K Company Percentage Income Statement For the Years Ended				
	12/31/14	12/31/13	Common-size Percents	
			2014	2013
Sales	$410,900	$298,000		
Cost of goods sold	210,000	160,000		
Gross Margin	$200,900	$138,000		
Selling, general and administrative expense	$102,300	$44,300		
Interest expense	8,600	5,000		
Income before income taxes	$90,000	$88,700		

续表

J&K Company Percentage Income Statement For the Years Ended				
	12/31/14	12/31/13	Common-size Percents	
			2014	2013
Less: income tax expense (34%)	30,600	30,158		
Net income	$59,400	$58,542		

Appendix A

复利现值系数表（PVIF 表）

期数	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.8116	0.7972	0.7831
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5935	0.5674	0.5428
6	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5066	0.4803
7	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5470	0.5132	0.4817	0.4523	0.4251
8	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.5019	0.4665	0.4339	0.4039	0.3762
9	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329
10	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946
11	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.3173	0.2875	0.2607
12	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2858	0.2567	0.2307
13	0.8787	0.7730	0.6810	0.6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2575	0.2292	0.2042
14	0.8700	0.7579	0.6611	0.5775	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2320	0.2046	0.1807
15	0.8613	0.7430	0.6419	0.5553	0.4810	0.4173	0.3624	0.3152	0.2745	0.2394	0.2090	0.1827	0.1599
16	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1883	0.1631	0.1415
17	0.8444	0.7142	0.6050	0.5134	0.4363	0.3714	0.3166	0.2703	0.2311	0.1978	0.1696	0.1456	0.1252
18	0.8360	0.7002	0.5874	0.4936	0.4155	0.3503	0.2959	0.2502	0.2120	0.1799	0.1528	0.1300	0.1108
19	0.8277	0.6864	0.5703	0.4746	0.3957	0.3305	0.2765	0.2317	0.1945	0.1635	0.1377	0.1161	0.0981
20	0.8195	0.6730	0.5537	0.4564	0.3769	0.3118	0.2584	0.2145	0.1784	0.1486	0.1240	0.1037	0.0868
21	0.8114	0.6598	0.5375	0.4388	0.3589	0.2942	0.2415	0.1987	0.1637	0.1351	0.1117	0.0926	0.0768
22	0.8034	0.6468	0.5219	0.4220	0.3418	0.2775	0.2257	0.1839	0.1502	0.1228	0.1007	0.0826	0.0680
23	0.7954	0.6342	0.5067	0.4057	0.3256	0.2618	0.2109	0.1703	0.1378	0.1117	0.0907	0.0738	0.0601
24	0.7876	0.6217	0.4919	0.3901	0.3101	0.2470	0.1971	0.1577	0.1264	0.1015	0.0817	0.0659	0.0532
25	0.7798	0.6095	0.4776	0.3751	0.2953	0.2330	0.1842	0.1460	0.1160	0.0923	0.0736	0.0588	0.0471
26	0.7720	0.5976	0.4637	0.3607	0.2812	0.2198	0.1722	0.1352	0.1064	0.0839	0.0663	0.0525	0.0417
27	0.7644	0.5859	0.4502	0.3468	0.2678	0.2074	0.1609	0.1252	0.0976	0.0763	0.0597	0.0469	0.0369
28	0.7568	0.5744	0.4371	0.3335	0.2551	0.1956	0.1504	0.1159	0.0895	0.0693	0.0538	0.0419	0.0326
29	0.7493	0.5631	0.4243	0.3207	0.2429	0.1846	0.1406	0.1073	0.0822	0.0630	0.0485	0.0374	0.0289
30	0.7419	0.5521	0.4120	0.3083	0.2314	0.1741	0.1314	0.0994	0.0754	0.0573	0.0437	0.0334	0.0256

Appendix B

年金现值系数表（PVIFA 表）

期数	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.885
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.808	1.7833	1.7591	1.7355	1.7125	1.6901	1.6681
3	2.941	2.8839	2.8286	2.7751	2.7232	2.673	2.6243	2.5771	2.5313	2.4869	2.4437	2.4018	2.3612
4	3.902	3.8077	3.7171	3.6299	3.546	3.4651	3.3872	3.3121	3.2397	3.1699	3.1024	3.0373	2.9745
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6959	3.6048	3.5172
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.2305	4.1114	3.9975
7	6.7282	6.472	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.033	4.8684	4.7122	4.5638	4.4226
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348	5.3349	5.1461	4.9676	4.7988
9	8.566	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.759	5.537	5.3282	5.1317
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.8892	5.6502	5.4262
11	10.3676	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.139	6.8052	6.4951	6.2065	5.9377	5.6869
12	11.2551	10.5753	9.954	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.4924	6.1944	5.9176
13	12.1337	11.3484	10.635	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6.7499	6.4235	6.1218
14	13.0037	12.1062	11.2961	10.5631	9.8986	9.295	8.7455	8.2442	7.7862	7.3667	6.9819	6.6282	6.3025
15	13.8651	12.8493	11.9379	11.1184	10.3797	9.7122	9.1079	8.5595	8.0607	7.6061	7.1909	6.8109	6.4624
16	14.7179	13.5777	12.5611	11.6523	10.8378	10.1059	9.4466	8.8514	8.3126	7.8237	7.3792	6.974	6.6039
17	15.5623	14.2919	13.1661	12.1657	11.2741	10.4773	9.7632	9.1216	8.5436	8.0216	7.5488	7.1196	6.7291
18	16.3983	14.992	13.7535	12.6593	11.6896	10.8276	10.0591	9.3719	8.7556	8.2014	7.7016	7.2497	6.8399
19	17.226	15.6785	14.3238	13.1339	12.0853	11.1581	10.3356	9.6036	8.9501	8.3649	7.8393	7.3658	6.938
20	18.0456	16.3514	14.8775	13.5903	12.4622	11.4699	10.594	9.8181	9.1285	8.5136	7.9633	7.4694	7.0248
21	18.857	17.0112	15.415	14.0292	12.8212	11.7641	10.8355	10.0168	9.2922	8.6487	8.0751	7.562	7.1016
22	19.6604	17.658	15.9369	14.4511	13.163	12.0416	11.0612	10.2007	9.4424	8.7715	8.1757	7.6446	7.1695
23	20.4558	18.2922	16.4436	14.8568	13.4886	12.3034	11.2722	10.3711	9.5802	8.8832	8.2664	7.7184	7.2297
24	21.2434	18.9139	16.9355	15.247	13.7986	12.5504	11.4693	10.5288	9.7066	8.9847	8.3481	7.7843	7.2829
25	22.0232	19.5235	17.4131	15.6221	14.0939	12.7834	11.6536	10.6748	9.8226	9.077	8.4217	7.8431	7.33
26	22.7952	20.121	17.8768	15.9828	14.3752	13.0032	11.8258	10.81	9.929	9.1609	8.4881	7.8957	7.3717
27	23.5596	20.7069	18.327	16.3296	14.643	13.2105	11.9867	10.9352	10.0266	9.2372	8.5478	7.9426	7.4086
28	24.3164	21.2813	18.7641	16.6631	14.8981	13.4062	12.1371	11.0511	10.1161	9.3066	8.6016	7.9844	7.4412
29	25.0658	21.8444	19.1885	16.9837	15.1411	13.5907	12.2777	11.1584	10.1983	9.3696	8.6501	8.0218	7.4701
30	25.8077	22.3965	19.6004	17.292	15.3725	13.7648	12.409	11.2578	10.2737	9.4269	8.6938	8.0552	7.4957

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